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GAILLARD'S MEDICAL JOURNAL.

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ORIGINAL ARTICLES.

PERITONEAL ENDOTHELIUM.

BYRON ROBINSON, B.S., M.D.,
Chicago.
PROFESSOR OF GYNÆCOLOGY IN CHICAGO POST-GRADUATE SCHOOL.

Some thirty-five years ago Recklinghausen announced his method of staining serous membranes with silver nitrate solutions. Since that time the peritoneum has been a favorite field of microscopic research with a few good observers who have left records such as Auerbach, Oedmansson, Ludwig, Schweigger-Siedel, Virchow, Teichman, Klein, Burden Sanderson and others. The employment of a one-half per cent. solution of silver nitrate for some three minutes on peritoneal endothelium produces dark lines between the cells. It also produces dark lines between endothelia of lymph vessels and blood vessels. Recklinghausen's method enables us to see endothelia in locations where previously they could not be observed. Like all discoveries it brought out a train of new views. This persistent student showed that organized or unorganized matter as milk or Berlin blue introduced into the peritoneal cavity would pass into the subserous lymph spaces. He selected the centrum tendineum (diaphragm) for his investigations to determine the methods of passage of matter from the peritoneal cavity to the lymph vessels of the subserous connective tissue. A piece of the membrane was put on the slide under the microscope and the milk drops searched for. When the drops were found a drop of solution of nitrate of silver was allowed to penetrate under the cover glass. Exactly where the milk drops passed through the peritoneum the silver salts produced pictures of dark colored openings which were

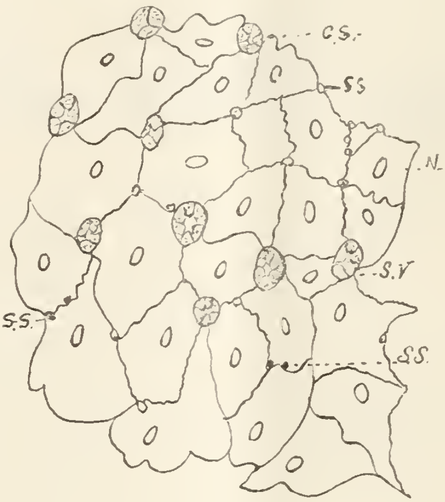

FIG I

Fig. I (after author) is drawn from a rabbit's omentum. The rabbit was killed by ether, the abdomen carefully opened and in situ the omentum brushed with a little cotton on a tooth pick. The brush should be rubbed three or five times over the part and wet in distilled water, better in rabbit's own peritoneal serum. The figure is drawn under ocular 4, objective 8 a (Reichert's). The silver nitrate used was one-half per cent., remaining on the parts some four minutes and then mounted in glycerine. The figure shows well the stomata vera CC. It will be observed that at CS the stomata are closed while toward the middle several remain open. Notice the stomata vera (CS) are lined with granular, polyhedral cells in which one can occasionally see a nucleus. These little mouths are found in all kinds of states as regards being open or shut. These are the vertical lymphatic canals which preserve a direct communication between the peritoneal cavity and the subperitoneal lymph channels. Besides they are a source of new endothelia to supply the place of degenerating comrades. N points to nucleus of the endothelial cell which is clearly brought out by logwood applied three minutes. SS. points to black dots or open points. These are known as stomata spuria and Virchow calls them lymph corpuscles; Recklinghausen and Oedmansson name them connective tissue corpuscles jutting upward between the junction of two or more opposing endothelial cells. SV represents stomata vera open. I did not sketch in this figure other apertures which I have styled intra-endothelial stomata. The figure is drawn as nearly natural as possible.

large enough to allow the milk drops to pass through the peritoneal openings to the lymphatic vessels immediately below. These dark mouthed peritoneal openings were especially abundant at the borders and over lymph vessels. From these investigations Recklinghausen drew the conclusion that the lymph vessels of the diaphragm have a direct communication with the peritoneal cavity. Also that the openings have double the size of red blood corpuscles. These openings, known as stomata vera, were confirmed by all diligent histologists. In 1861 Oedmansson, of Stockholm, Sweden, while working in the pathologic institute of Berlin on the peritoneum of frogs noticed little black points in the, interstices of the endothelial cells and made special study of them. These openings are known as stomata spuria. Oedmansson's work was no doubt done under the sharp, suggestive eye of Virchow, for Virchow had previously seen these black points and compared them to lymph capsules. The investigations which I here communicate were gained by the examination of the peritoneum of the frog, rabbit and cat, but especially the frog and rabbit. The peritoneum of these two animals (which resembles man) possesses a single layer of flat endothelial cells. (I discard the name epithelium for serous membrane.) In general the endothelial cells are very various in all dimensions and outlines. They exist of all shapes from the enormous zigzag outlined endothelia of the frog's lymph sac to the quite regularly formed endothelia of the cat's mesentery. However one can say in general that the outlines of the endothelia covering lymph vessels are sinuous while the endothelia covering peritoneal supports (ligamentum peritonei) are more smooth in outline. The best way to treat the peritoneum in order to observe the endothelia is to open the animal's abdomen and pour the one-half per cent. of silver nitrate on the parts while in situ for, say three minutes. Whence the intercellular lines will present with little disturbance from trauma or dragging. But if one snips a small piece of the peritoneum, e. g., the omentum and puts it under the cover glass and allows the silver solution to slowly percolate under it, the black inter-endothelial lines will appear in intensity according to the strength of the silver solution and the length of time the sunlight works on it. At first the inter-endothelial lines are very fine and delicate but the color gradually spreads until a large part of the endothelial surface is involved in a speckled brownish color. Of course the lighter the lines can be colored the better view they present, as no adjacent matter then shows any color. However, according to the strength of the silver salts and the sunlight all grades of staining will arise. What these inter-endothelial black lines represent after the treatment with solutions of silver nitrate is questioned. But undoubtedly the lines represent an albuminous substance blackened by action of silver. The varying degrees of color from the center of the endothelial cell to its circumference is explained by the greater amount of

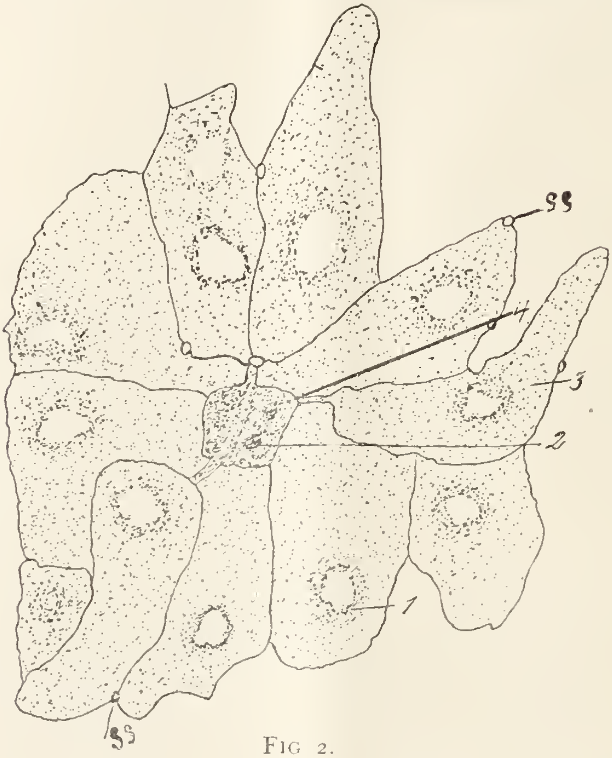

FIG 2.

Fig. 2 (after author) sketched from cisterna lymphatica magna of frog (ocular 2 obj. 8 a R). The frog was opened and the parts stained in situ with one-half per cent. solution of silver nitrate for about four minutes. The large irregular endothelial cells are plainly marked off by dark lines which are stronger according to the length of time the silver remains on and the kind and strength of sunlight. 1, Nucleus of endothelial cell; 3, points to the cell itself, while quite near it is an open stomata spuria. Several others (SS) may be also observed. 4 points to a stoma verum in which there appear to be three young granular many faced cells. 2, points to the nucleus of one. One granular cell of the stoma verum does not show a distinct nucleus—only thickened granules. The stoma verum is shut. The Ag. No. 3 did not brown the nucleus, but that may be due to the elevated condition of the nucleus and also liquid albuminous substance in more abundance at the junction of the cells. Observe that the nucleus is eccentrically located. It was aimed to draw the cells as near natural as possible in all their relations.

albuminous substance very near the circumference of the cell. If we stain for a couple of minutes the specimen in logwood the nucleus comes out prominently as a clear cut, oval body, often placed excentrically. Some endothelia may possess two neuclei.

We will now examine the black inter-endothelial (inter-cellular) line produced by silver staining in the frog and rabbit. By very superficial observation of the cuts two kinds of structures are seen in the intercellular space, viz: stomata vera and stomata spuria.

The stomata vera are the large openings lined by peculiar granular bodies. The openings are round or oval. They are situated nearly always at the junction of several endothelial cells, but occasionally appear to be situated on a single inter-endothelial line. They arise by all effects of silver nitrate. They vary very much in size, but this may be on account of their open or closed condition. The peculiar granular cells which line this opening show a distinct neucleus. Distinct lines may cross the stomata vera, separating entirely the granular cells or one may observe the granular nucleated cells lining the circumference of the aperture. The size of some stomata vera are much larger than a blood corpuscle while others are so small that a very high power is required to distinguish them. Large and small stomata exist close to each other. The number of stomata vera on any one place varies very much, not only in different animals but also in the same species; especially is this true in the rabbit. The stomata vera are innumerable in the pyloric end of the rabbit's omentum and sometimes at other portions of the gastro-colic or gastro-splenic omentum while on its mesentery they may be found quite limited in number. Again the stomata vera seem to be distributed in groups or patches or to be in close relation with what must be termed germinating endothelium in various locations in the omentum. The diaphragm is the well known locality where older writers used to point them out. I have observed specimens from the frog and rabbit on the same day, of say for an hour after the application of the one-half per cent. solution of silver nitrate and then again the next day where a much larger number of stomata appear in the microscopic field with much more clearness than the day previous. The stomata vera are irregular anatomical structures so far as numbers and location are concerned. Also a cell nucleus is not always discernible in the granular cell lining the stomata. Besides it seems that these stomata may close to a single black spot or open to a wide mouth and the very varying number may indicate appearance or disappearance under some yet unknown process. The apparent condition of these stomata seems to be that of inconstancy. The interpretations of stomata vera are that they are vertical lymph canals maintaining direct connection between the peritoneal cavity and the subserous lymph vessels. The stomata vera regulate the amount of peritoneal fluid perhaps by some automatic sphincter in their mouths. They are sources of new endothelium. They are vertical lymph channels, fluid regulators. I have found stomata vera in frogs, in all parts examined, mesentery, omentum, mesogaster, cisterna lymphatica magna, gall-bladder and on the serous portion of the membrane holding the oval sac. In the rabbit on the omenta and mesenteries so far as I can observe the best preparations are those left to weak light for twenty-four hours after the specimen has been treated with silver nitrate.

A second class of openings in the endothelium is known as stomata spuria. These are far more numerous than the first class or stomata vera. They are chiefly situated on black inter-endothelial lines produced by silver nitrate. They are shaped round, oval or irregular and of various sizes. Some of the dark irregular spots are no doubt albuminous precipitates due to tramua or other causes. But others must belong to some automatic or physiologic process associated with the endothelia. So far, in my investigations, I am unable to decide on the nature of these peculiar openings or stomata spuria. They are in some cases very numerous, in others spare and irregular in shape. The black dots occur at any point along the inter-endothelial border. Some show only a small clear opening, others a granular looking mass. Now the blackest points may represent young connective tissue cells which are highly affected by the silver nitrate, and are projecting upward between the junction of the endothelial cells to take the place of the dying comrades. It may represent a source of new endothelia whereby the peritoneal cavity may repair its death loss. In another kind of opening which shows itself as a round or oval clear cut space the connective tissue cell may have fallen out. Of course one must be cautious in examining the endothelia on account of the medium which is employed. The cells will swell with water but shrink with alcohol. In fact very careful preparations are required to secure natural specimens. Distilled water, fresh silver nitrate solutions, careful staining in situ and a most delicate handling of the specimens are an absolute necessity in securing endothelial specimens. The specimens should be kept in a dark place or they will soon cloud. The nature of the second class opening, stomata spuria, are difficult of interpretation. Are they young connective tissue cells projecting up between the endothelia to take the place of decaying ones? Or are they simply accumulations of intercellular substance, albuminous matter which by some accident, trauma, has widened its limits. Handling the peritoneum may have so traumatized the endothelia that rents or holes may arise. Uneven, sinuous, zigzag edges of the endothelia may aid in producing such conditions. The condition of the stomata spuria as being a simple opening or a black dot is in accord with the stomata vera as being

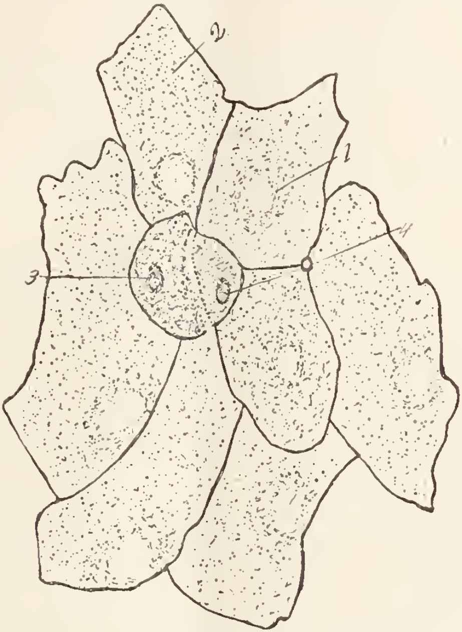

FIG 3.

Fig. 3 (after author) is a sketch on which much care was used to draw it as absolutely natural as possible. It is from the cisterna lymphatica magna of a frog, silvered with one-half per cent. solution. Observe how the shape and outline of the endothelia differ from those of the other frog as both specimens are from the lymph sac on the right side of different frogs. 1, points to the nucleus which is not well stained in the center. 2, points to the endothelial cell browned by the silver (perhaps the pepper and salt-appearance is the precipitated albuminous substance). 3, points to a nucleus in a granular young cell of a stoma verum, and 4 shows the other nucleus of the granular cell. A point may here be noted in this stoma verum. Notice that one of the intercellular black lines passes directly across the stoma. Now, in other specimens it may be observed that the granular cells may be entirely below the stoma verum and be gradually projecting up between the junction of the several cells, i. e., the granular polyhedral cells of the stomata verum are a matter of slow growth. Observe the nuclei are eccentrically located. No stomata spuria are marked in this specimen except where the line crosses. The stoma verum is a vertical lymphatic canal which maintains a direct open communication between the peritoneal cavity and the subserous lymphatic vessels. The stomata vera are regulators of serous fluid. They are the source of young endothelia to supply decaying ones.

open or closed—an inconstant condition. In the stomata spuria the black dots are more numerous than the openings. Examinations of the peritoneum demand uninterrupted leisure to secure accurate general histologic views on account of the changing and varied character of the endothelia under media and reagents.

A third kind of openings which I will term endothelial stomata is in contra-distinction to intercellular stomata. These are openings through the endothelial plate itself and are quite irregular in location on the cell surface and in existence. The aperture appears to penetrate the endothelial plate as an oval or round shape.

CONCLUSIONS.

1. There are three kinds of openings in the peritoneal membrane.
2. The stomata vera are vertical canals which directly connect the peritoneal cavity with the subserous lymph canals.
3. The stomata vera are lined with granular polyhedral nucleated cells.
4. The stomata vera are sources of supply of new endothelia.
5. The stomata vera undoubtedly regulate the amount of peritoneal fluid.
6. The stomata spuria are perhaps young connective tissue cells projecting up between the endothelial cells to repair the places of dying ones.
7. The stomata spuria may be precipitated inter-endothelial substance.
8. The intra-endothelial stomata are yet unplaced.

———:o:———

Sixty-five great trunk lines of railway have laws forbidding their employes to enter saloons or drink spirits of any kind while on duty. Ten of these roads have rules discharging without question any of their employes who frequent saloons.

Progress Medical reports that a tax has been voted in Paris to defray the expenses of cremating infected clothing, etc., and of disinfecting houses during an epidemic or the occurrence of a contagious disease. The tax is progressive and graded according to the furnishings of the house, the minimum value being 800 francs—below that being exempt—and the maximum 20,000 francs. The tax ranges from 5 to 200 francs and defrays the expenses for the whole course of the epidemic or disease, no matter how many cases require disinfection.—Jour. Am. Med. Asso.

TRANSLATION.

ETIOLOGY OF TYPHOID FEVER; HISTORICAL EVOLUTION AND PRESENT DOCTRINE.

By DR. T. LEGRY.

Translated for Gaillard's Medical Journal,

By H. McS. GAMBLE, Ph. D., M.D.,

Moorefield, W. Va.,

Typhoid fever, also called dothineteritis (Trousseau), continued fever, is characterized, it was said before the discovery of the pathogenic microbe: 1st. anatomically, by special lesions of the small intestine, above all of Peyer's patches, with concomitant alterations of the mesenteric ganglions and of the spleen; 2nd, clinically, by a continued fever of fixed type, by intestinal disorders, nervous symptoms, splenic tumefaction and a discrete eruption of lenticular rose-colored spots.

It is defined to-day as a general disease which betrays the reaction of the organism invaded by the typhic bacillus (Chautemesse).

HISTORY.

It seems certain that typhoid fever was known to the Ancients. But it is very difficult, when we study the history of epidemics of former times, to distinguish clearly what, in the chaos of pyrixias, belongs to typhoid fever, to typhus, to malaria.

The confusion persisted besides for a long time, and the documents left from the sixteenth century by Fracastoe, Baillou, Spigel, Willis and Sydenham, still furnish but altogether insufficient elements of interpretation.

It was not until 1739, that Haxam, really indicated in an explicit manner, the clinical features of the disease, which he designated under the name of slow nervous fever. Soon the epidemics of Lausanne (1754-55), of Goettingen (1760-61), were the point of departure of new observations, and the descriptions of Borsieri (1785), of Stoll (1785), became more and more precise.

It is true that the works of the pyretologists, with their innumerable divisions, for a moment obscured the question. Thus it is that the classification, altogether symptomatic, adopted bv Pinel (1798), in his Nosography of the essential fevers, obliged one to search for the exposition of typhoid fever in four or five different chapters.

Pathological anatomy brought the light. Prost, in 1802, Petit and Serres, in their treatise upon entero-mesenteric fever, describe in detail the intestinal lesions belonging to the different stages of the affection which they believed they were the first to observe and which they did not think of cómparing with cases clinically reported before them. This new and profitable way of necroscopical researches was afterwards followed by Craveilhier, Androl and Bretonneau.

Thus the materials were preparing and accumulating which were, upon the strength of clinical observation and anatomical demonstrations, to establish the autonomy of typhoid fever and marks its place in the nosological list.

It is to Louis that belongs the honor of having accomplished this synthetical work. In 1829, in his researches upon the disease known under the names of gastro-enteritis, putrid fever, adynamic fever, etc., he described with perfect exactness the symptoms and the pathological anatomy of the disease which now engages our attention, and bestowed upon it the name of typhoid fever, adopted soon afterwards by Chomel and since then become classical in France.

The unity of typhoid fever would have been definitely established, if the frequent co-existence in Germany, in England and in the Scandinavian countries of typhus, had not aroused fresh doubts. It required not less than twenty years to determine the limits of the two diseases. With this work are associated the names of Shattuck (of Boston), of Gehrard and Pennok (of Philadelphia), who had all three studied typhoid fever at Paris; also those of Valleix, Rouchoux, Barlow, Stener, and finally of W. Jenner (1849-51), Forget, Godelier, Barrallier, Jacquot, etc.

The natural history of typhoid fever was thus fixed in its essential lines: the disease was defined by its symptomatology and by its anatomical lesions. Contemporary medicine was about to preoccupy itself more particularly with questions of etiology and of pathogony, to the great advantage of therapeusis and prophylaxis. Let us see after what doctrinal vicissitudes the great scientific movement of these later years reached the present etiological conception of typhoid.

ETIOLOGY.

A.—Evolution of etiological doctrines.

The first important etiological notion that came to light was that of contagion. Affirmed by Leuret (1828), Bretonneau (1829), Gendron

(1834), it remained, however, the object of numerous disagreements, and Chomel, Andral and Louis, after long discussions upon this subject, completely rejected the hypothesis.

Finally in 1849 the memoir of Piedvache (of Dinan), furnished certain proof of this contagiousness.

The disaccord which had so long reigned might be explained by the different conditions under which the observers found themselves placed. The filiation of the cases is in fact almost impossible to discern in Paris and in large cities, whilst it imposes itself with proof in small localities; this is what caused Forget to say: "I have denied contagion until, transported into the country, irrefragable facts were produced to demonstrate to me that typhoid fever may affect persons who sojourn about the sick."

However, many physicians found themselves in the presence of facts, the connecting link of which was not perceptible, and whilst admitting the possibility of contagion, they also believed in the autochthonous, spontaneous origin of typhoid fever, under the influence besides of very obscure causes. The pythogenic theory of Murchison (1858), is the most complete expression of this view of the matter. According to this author the infectious element was derived from any kind of animal matter in putrefaction. "The disease may arise," said he, "independently of any anterior case, from the fermentation of fecal matters, and perhaps from the fermentation of other organic matters."

Budd, on the contrary, a partisan of specificness, contended (1856-1873) that all typhoid fever is the product of an anterior typhoid fever. The veritable precursor of the bacteriologists, he admitted that the morbid principle was eliminated with the diarrhœic stools, disseminated the contagium at a distance and impregnated the soil with it. The diffusion was such, said he, that a single patient could infect an entire city if the dissections penetrated into the drains. And he showed that the transmission might be accomplished by the air and water.

The famous theory, emitted by Pettenkofer (1834-1855), upon the oscillations of the subterranean layer of water, which had so much vogue in Germany, indicated only in a very vague manner that role of fecal emanations and of the pollution of the water. "I do not know," said Pettenkofer, "what is the cause of the disease, but I believe that I can connect it with the variation of the water level of the wells. The role of these variations is to allow the subterranean water to moisten the soil and to retire, leaving it moist. It is when it is thus suitably moistened that it becomes dangerous. Too much dryness of the soil or too much humidity militate against the production of the disease."

The new adaptation of this theory to microbiological discoveries is not more demonstrative and the hypothesis of the maturation of the germs, recovering their virulence in the humid soil, has not prevailed against the doctrine of the transmission by potable water which, if it does not sum up in itself alone the whole question of etiology, furnishes at least, more than any other, the key to the phenomena of epidemiology.

Finally, two great currents of opinion divide the learned world. Some, with Murchism, admit the production a novo or spontaneously, of typhoid fever, under the influence of ordinary causes.

Said Prof. Chauffard, in 1877, to the Academy, "it is the unrecognized spontaneity of the living organism that dominates the whole etiology and the whole pathogeny of typhoid fever." And he affirmed the doctrine of the specific morbid generation in the interior of the living organism. Stich even gave, one of the first, an interpretation of spontaneity, upon the supposition that every individual carries, in his intestine, materials of putrid poisoning, constantly neutralized in the normal state, but which, under certain circumstances, provoke typhoid infection. Such was also the theory of Prof. Peter, in whose opinion typhoid fever was fabricated entirely by the patient, auto-typhization being only the result of disorders engendered by the retention of waste materials in an overworked organism.

The adverse school with Budd, maintained as we have seen, the necessity of bearing the specific contagium, represented by a unique cause and always giving rise to a disease similar to itself.

Again the discovery of the microbe of typhoid fever (microbe of Eberth-Gaffky), was about to singularly facilitate the solution of the problem.

Typhoid fever being according to the definition which we have adopted, function of the typhous germ, the discussion ought to bear upon the three following points that we are going to examine. 1st, what are the characters of the typhous bacillus? 2nd, what are the vehicles of the bacillus and what are the modes of invasion of our organism? 3rd, what are the causes that favor within us the development of the typhous infection?

B.—The typhous bacillus.

It was Eberth who, first, in 1880, by aid of new processes of coloration which he did not possess at the time of his earlier researches, in 1872, was able to determine some of the morphological features of the microphyte which was to bear his name.

Yet, even after confirmation of this work by Koch, Meyer and Friedlander, G. Coatz, Crooke and Letzerich, doubts still prevailed as to the specificness of the bacillus of Eberth.

The complete discovery was made known by Gaffky, in 1884. This savant, utilizing the new methods of culture upon a solid medium, succeeded in isolating the microbe and in studying the form of its colonies upon gelatin and upon potato, the formation of the spores, etc.

In France the remarkable memoir of Chantemesse and Vidal, that appeared in 1887, has popularized these notions and effected many new results.

Evidently we can here only enter into a summary consideration of the typhous bacillus.

Morphology.—It represents itself generally under the form of a little spindle rounded at the extremities, about two to four inches long, and three times longer than wide. But notable modifications are observed as regards the shape and dimensions in varying the culture soils. The variety with a clear central space and filamentous aspect is met with especially in media that have become old, the nutritive power of which has diminished.

Mobility.—The typhous microbe is very mobile; it presents a very peculiar movement of oscillation upon itself. This mobility is due to the presence of vibratile cilia (112 to 4 micromillimeters).

Sporulation.—The spore is not known: the little clear and refractive sphere seen by Gaffky at the extremity of certain batomets is, in the opinion of Buchner and Pfühl, but a mass of brilliant protoplasmic concretions which must be referred to degenerative changes.

Cultures.—The typhous microbe is easily cultivated in bouillon, gelatine, serum, upon gélose whether glycerized or not and upon potato. It is multiplied also very well in milk or urine previously sterilized. Finally it is capable of development in the air: Roux, Chantemesse and Vidal have seen it proliferate in the open air.

Upon gelatine, which the microbe does not liquefy, the appearance is different, accordingly as the sawing has been done by puncture or in stria upon an inclined tube. It is above all important to recognize this in the culture upon plaques, for this is the mode of culture employed for the investigation of the bacillus of typhoid fever in any medium whatever. To speak truly, the development of the colonies is essentially polymorphous, which renders the diagnoses often very difficult. However in typical cases the two following aspects may be observed. At the beginning, each colony shows itself distinctly circular, thin, translucent, with a bluish mother-of-pearl appearance that persists ulteriously. If the colony continues to grow, it is, at the close of five or six days, furrowed by lines that extend from the periphery to the center; it seems to break out, to become fragmented, whilst its borders become irregular. It is then sometimes comparable to the circumvolutions of the small intestine twisted upon itself.

Upon potato we see, after a few days, nothing but a slight humid streak at the point of insertion,

G. d'Abundo, Birch-Hirschfeld, and since then Noeggerath, Grancher and Deschamps, Gasser, Cassedebats have had recourse to colored culture media for the purpose of facilitating the diagnosis of the typhous bacillus. This method is seldom employed.

Coloration.—The microbe of Eberth takes the aniline colors very well, but it is decolorized by the method of Gram, which is a distinctive feature of importance.

For coloring the bacilli in sections, Seitz made use of the solution of Loeffler or of that of Giehl. The method of Kühne may also render good service.

Resistance.—Chantimesse and Vidal have had to carry to a temperature of 100° bouillons containing typhous bacilli to see the tubes afterwards sewn with these fluids remain sterile. Sternberg and Janowsky have noticed that a moist temperature of 57°, for ten minutes, was sufficient to destroy a culture of typhous bacilli in bouillon.

On the other hand, development still goes on at 43°. The colonies still preserve their vitality in tubes of bouillon or of gelatine when subjected to freezing.

The most favorable temperature for the growth of the cultures varies between 25° and 35°.

Solar light exercises a destructive action upon the typhous bacillus (Gaillard, Janowsky), cultures, after four, six or eight hours of exposure to the sun, lose the faculty of developing.

Seitz, M. M. Vidal and Chantemesse, M. M. Straus and Wurtz have studied the action of chlorhydric acid and of the gastric juice. It results from these experiments, that the gastric juice affords but a very feeble protection against the typhous bacillus in the normal state. This protection is much more feeble still in the pathological state.

Reaction of the cultures.—The cultures do not give place to the development of indol. They do not cause fermentation of sugar of milk: a bouillon lactated and planted with the bacillus of Eberth yields no gaseous bullæ. Finally, the culture milk does not coagulate. These are very important characteristics, from a diagnostic point of view of the typhous bacillus.

Soluble substances.—The typhotoxine of Brieger represented only a part of the toxic products elaborated by the typhous bacillus. The more recent works of Brieger and Fraenkel have not enlightened us further upon the nature of the typhoidic toxine.

Inoculations of animals.—So far typhoid fever, such as is observed in man, has not been realized experimentally in animals. Chantemesse and Widal had inoculated the mouse, rabbit and guinea-pig with cultures and determined a septicæmia in these animals. Sanarelli has operated particularly upon the guinea-pig and he had recourse to peritoneal inoculation and succeeded in determining a morbid tableau and invariable lesions.

This latter author has reproduced in the guinea pig the same symptoms and the same lesions after the injection of typhoidic toxine. He concludes from this that it is to the toxine that must be attributed, at least in experimental typhoid fever, both the syndrome and the pathological alterations.

M. M. Gabriel Roux (of Lyon) and Rodet have contested the specific value of the bacillus of Eberth which, according to them, would represent only a transformation of the coli-bacillus. The identity of the typhic bacillus and of the coli-bacillus, the usual host of the intestinal cavity, if it should be verified, would tend to nothing less than to reassert upon the ground of bacteriology, the theory of the spontaneity of typhoid fever. But a rigorous observation of facts and experiments does not so far justify any such assimilation. Among the numerous characters that have been given for the purpose of differentiating the two micro-organisms, there are some, in effect, that establish a clear distinction. The principal are the following: the bacillus of the color causes the lactated bouillons to ferment and coagulates milk (Perdrix, Chantemesse and Vidal); its culture gives the reaction of indol (reaction of Kitasato). We have seen that the typhic bacillus does not possess these biological properties. These are fundamental differential characteristics which leave intact the doctrine of the specificness of the bacillus of Eberth.

To be Continued.

SELECTIONS.

DIFFICULTIES OF MEDICAL HEALTH OFFICERS IN DEALING WITH CASES OF SUSPECTED DIPHTHERIA.

By D. E. ENGLISH, M.D.,

Millburn N. J.

One of the great difficulties standing in the way of the medical health officer is the habit of some physicians of not reporting or of concealing cases of infectious or contagious disease. With the sanitary arrangements now in vogue in all cities and large towns, epidemics of contagious disease would be almost impossible if every case was promptly reported to the health authorities. The mischief is done by those cases which are either not seen by the physician or not reported by him. The physician fails to report sometimes through carelessness or wilful neglect, but more often on account of certain diagnosis. The latter reason is especially true in cases of diphtheria. The patient has a slight sore throat, does not seem to be dangerously sick, and the doctor does not like to put the family to the trouble and expense of quarantine and disinfection when he does not feel certain that he is dealing with a case of true diphtheria. If he does report the case, and the nature of the sickness remains in doubt, the patient at no time being seriously sick, he will be very apt to lose the patronage of that family. Under these circumstances the physician should be recompensed in proportion to the risk he is forced to assume by reporting the case. The majority of communities force the doctor to report by fining him heavily for neglecting to do so, and rewarding him with sufficient money to pay for the postage-stamp when he does. This is wrong principle. It assumes the physician to be a rascal, who must be carefully watched and forced to do his duty. If the law was exactly reversed,—i.e., if the doctor received twenty dollars for each report and was fined twenty-five cents for each neglect to report, there would soon be no more epidemics of diphtheria. In other words, if the physician was properly protected in the performance of his duty he would never neglect to perform it thoroughly.

A second difficulty met by the health officer is the verification or contradiction of the attending physician's diagnosis. This is often a delicate matter on account of the inexactness of medical science. The officer has, perhaps, less reputation as a diagnostician than the attending physician. He does not like to contradict him unless he is entirely certain of his own diagnosis. On the other hand, he wishes to give the community at large the benefit of the doubt.

The family naturally wish the officer to declare the disease non-communicable, and assure him there has been no exposure to infection or contagion, that the patient is not very sick, and that it is really not worth his while to see him at all. In almost the same breath they will inform him that the doctor has ordered that the patient is not to be seen by any one, not even by the the health officer, as it might have a very bad effect on him to be disturbed. In suspected diphtheria it has become customary to rely on the bacteriological examination for positive diagnosis. The case is quarantined till the microscope reveals the presence or absence of the Klebs-Lœffler bacillus, and then treated accordingly. This shows a beautiful faith in this particular microbe as the cause of diphtheria. Two years ago I possessed this faith, now I am in doubt. According to reports in the medical journals, the bacillus is found in healthy throats, in unhealthy throats that have no clinical resemblance to what we were in the habit of calling diphtheria before we knew of the germ, and in throats that any doctor would pronounce diphtheritic. On the other hand, the germ seems to be absent from some throats that appear by every clinical sign to be the seat of diphtheria, and these cases seem to infect others, and are sometimes fatal. If we are to believe the Klebs-Lœffler bacillus to be the cause of all cases of diphtheria, then the definition of diphtheria should be, "a contagious disease of the throat differing from other similar contagious diseases of the throat in being caused by the Klebs-Lœffler bacillus."

A third difficulty to be surmounted is the enforcing of proper quarantine. In a few instances the instructions of the health officer are obeyed to the letter and all goes well, but in the great majority of cases they are partially or entirely ignored. Relatives and near friends are allowed to see the patients, books are sent in and returned, food delicacies are accepted and the dishes returned without proper disinfection, and the convalescent patient is allowed to write letters that are sent by post. The health officer must indeed be very active and watchful if he would succeed in enforcing absolute quarantine. People object to being ostracized, do not like to consider themselves a source of danger to their neighbors, and utterly refuse to proclaim themselves "unclean." It is entirely right and proper for other people to be compelled to do these things, but for them, with their careful and cleanly habits, it is utterly absurd.

A fourth problem is to trace the disease to its source. It is often necessary to follow the patient's movements through every hour of his life for days past; to know with whom he came in contact; to find out what clothing, books, etc., have been brought into the house. and where they came from; to examine the milk and water supply; to inspect the premises. paying especial attention to the kitchen, sink, and the cellar; and, not the least important, to beware of theories advanced by interested parties. This is the most interesting part of the health officer's work, for it arouses the instinct of the hunter or detective, which every man possesses in a more or less latent state. All sorts of obstacles will be thrown into his way, intentionally or unintentionally. The truth will be stretched by interested parties until it is unrecognizable; memories will be filled with convenient blanks. The patient's family is sure he caught it from Mr. A.'s children, who have not been sick at all, and conveniently forgets the fact that he played with Mr. B.'s children on the same day that they were taken sick. A little diplomacy reveals the belief that it was beneath his social position to play with Mr. A.'s children, therefore he must have received his diphtheria from them; while it was an honor for him to be allowed to play with Mr. B.'s children, therefore no possible harm could come from it. The general public is a little apt to be illogical in sanitary matters, and the evidence as to the source of contagion has to be very carefully sifted before it is safe to arrive at conclusions.

The matter of disinfection also presents difficulties, but the officer by this time generally has such firm ground to stand upon that he can insist on what is necessary. Nevertheless it is entirely impossible to convince some people that it is better to destroy five dollars' worth of property than to run the risk of disease and death, and there will be hard feelings in the matter. And it is next to impossible to get landlords of tenements and cheap apartments to make proper repairs to plumbing and drains. The only way to accomplish this in many cases is to have the work done at the expense of the local government, and sue the landlord for the expense. After he has been treated in this way twice he usually obeys the orders of the health officer. But it is necessary to be able to prove in court that a nuisance existed, and that the repairs were not more expensive than necessary.

Probably the most difficult thing of all for the medical health officer to accomplish is to do his whole duty without making enemies or losing practice. This very few, if any, accomplish: it is about impossible; for this reason the officer should be paid enough salary to protect him from losses in this way, as well as to pay him for the hard and disagreeable work he has to do, and for the exposure to dangers that may cause disease or death in his family, or end his own life.

Nearly all of the difficulties encountered by the medical health officer in dealing with diphtheria or other contagious or infectious disease are due to ignorance on the part of the general public. The remedy is education, and as a health officer I wish to appeal to my professional brethren for help. I wish to ask every one of you to engage in a campaign of education against epidemic disease. Let every physician constitute himself a bureau of general information on sanitary matters. Let him be a distributor of instructive literature on these subjects. Very few people outside of the medical profession know in what a multitude of ways contagion may be carried, or in what kinds of filth disease-germs grow most rapidly. They have wrong ideas as to what is and what is not filth. They do not know the value of sunlight and fresh air as disinfecting agents. They need teaching, and no one can teach them so well as the family doctor. This is preventive medicine. This is the kind of advice the physician will be paid for in the future, when he has become more a sanitary specialist than a curer of disease.—Annals of Hygiene.

THE TREATMENT OF INTUSSUSCEPTION.

Intussusception, being a mechanical condition, must be relieved by mechanical means. Drugs, except opium, are either useless or dangerous. A cathartic should not be used under any consideration when there is even a suspicion of this condition. If one has been administered before the diagnosis has been made, its action should be checked as far as possible by the free use of opium.

Opium in small doses, by relieving pain, may prove, in the early stages, of the greatest service. The chief objection to its use is the danger that it will mask the symptoms, and the attendants will be led to the false belief that the patient is improving.

Attempts at reduction should first be made by means of injections. Time should not be wasted upon various methods of inflation and taxis. Injection of warm water by means of a fountain syringe is so far superior to all other methods that when it has been thoroughly tested and has failed, operation should be resorted to. Thorough testing does not mean spasmodic efforts with a bulb syringe. This is a dangerous instrument, for a man may easily apply a pressure of ninety pounds to the square inch—a force sufficient to rupture the intestine. Here, as in so many other conditions, spasmodic pressure will utterly fail, while continuous, steady, and properly-regulated pressure will succeed. Such pressure cannot be obtained by a bulb syringe, a bellows, a syphon of vichy water, or the generation of any gas. We are indebted to Forest, of New York, for careful observations upon the amount of pressure which the intestine will sustain. The normal intestine, he found, will sustain without injury six pounds to the square inch. Great pressure may be obtained by a column of water according to a well-known hydrostatic law. The elevation of the receptacle each two and one-half feet will add one pound pressure to each square inch. Steady and efficient pressure can be obtained, therefore, by proper elevation of the bag of a fountain syringe. It may safely be held twelve feet above the patient, but less pressure should be tried first. Such pressure has the great advantage of being applied in every direction. It distends the sack, and exerts force upon the tissues which cause the obstruction at the neck of the invagination. After the end of the second day, it is unwise to use so much force, for the bowel by that time may have become softened and weakened.

In giving the injection, the child is anæsthetized and the hips are elevated. A large-sized tube is used, and the rectum is occluded by means of a bandage wound about the tip in the shape of a cone. The pressure, graded by the elevation of the bag, should be steadily applied for thirty minutes. The greatest gentleness should be observed throughout. Should these measures fail when conscientiously carried out, laparotomy should be performed, although the results of this operation have not, on the whole, been encouraging. They have been somewhat more satisfactory, however, during recent years. Great improvement in the results will undoubtedly be obtained by earlier operation under strictly aseptic methods.—Editorial, Archives of Pediatrics.

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ABSTRACTS.

The Conservative Treatment of Disease of the Uterine Appendages.

Dr. C. H. F. Routh (British Gynæcological Journal) says:

1. The ovary, besides being concerned in ovulation, secretes especially, but in conjunction with other glands, a peculiar principle, spermin, which being reabsorbed into the blood is most useful in its nutritive, oxygenating and recuperative power in maintaining the well-being of the female, and the want of which leads to bodily and mental debility.

2. Complete castration of females leads to forced sterility and in many cases to the induction of an earlier menopause and premature old age, and frequently to decay and perversion of mind. Partial castration produces the same effects in a minor degree.

3. The mortality of cases of diseased adnexa left to theselves varies from nil to 4 per cent.

4. But the mortality of cases operated on by abdominal section varies from 2.5 per cent. to 12.1 per cent.

5. Complete castration has been practiced too frequently and often unnecessarily.

6. Preceded by abdominal section, the modes of operating more conservatively by 'partial' castration and resection of tubes, or tubes and ovaries combined, and by ignipuncture of cysts in the latter, give much more satisfactory results with less mortality even in cases of pyosalpinx, and with no impairment in power of child-bearing.

7. The mode of treating the diseased appendages per vaginam and rectum, without abdominal section, by acting on the uterus itself, by electricity even in the cases of gonorrhœal pyosalpinx, and puncture by aspirator, offers the greatest advantages, the mortality being almost nil, the recoveries durable, and the motherhood left intact.

Consultations.

1. In the matter of consultations the medical profession is drifting from the law written in 1847 to the unwritten law inherent in the medical profession since the first doctor entered upon his work—far anterior to any historic record.

2. This drifting was inaugurated and is continued by forces and agencies which have made the nineteenth century the most remarkable in history—individual men or institutions have merely served as instruments for the operation of these forces and agencies.

3. There need be no anxiety concerning this drifting. The medical profession will always remain anchored to its fundamental nature of a competent honorable brotherhood. The changes sought are merely the substitution of a thing of universal application for a sectarian name of limited scope. It is sought to exclude from fellowship all who are incompetent, or disreputable, whether they have or have not a sectarian name. The final attainment of this drifting will mark a far higher standard of professional life, and a truer exemplification of individual liberty.

4. It is believed that we are drifting towards the practical adoption of the following: "Every physician shall be deemed eligible for professional consultation who has shown that he has such preliminary training as enabled him to comprehend the study of medicine; has fully mastered the elements of medical science and art; has complied with existing laws respecting physicians in the state of his residence; and who has maintained an honorable reputation. Of these qualifications the physicians of his locality shall be the final judges. If those who know him best endorse him, then shall he be freely admitted to membership in all medical organizations and be eligible for consultations."

5. If the profession fails to agree upon a statement in substance like the preceding, the logic of events points to a rejection of the entire written law of 1847, and return to the unwritten law of previous centuries—the one now holding sway in all countries except the United States.—Leartus Connor.

Epidemic Influenza and its Treatment.

Dr. W. L. Stowell, in the Archives of Pediatrics, says that there is no antidote to the influenza toxine. As in other infectious diseases, when the poison in the system, we must try to sustain the parts liable to suffer from its presence. Elimination must be promoted—from the lungs by expectorants, from the digestive tract by cathartics which increase secretion, from the skin and kidneys by drugs acting on the circulation.

In some cases cardiac depressants will act best, in others stimulants. If general treatment still leaves the patient suffering in some one part, give a symptom remedy for its relief. Phenacetin, antipyrine, or acetanilid proved good for the headaches. Doses must be small for small children. Old-fashioned diuretics and diaphoretics relieved fever and joint aches. Salicylate of soda came to be my routine for cases with pains and fever, two or three grains being given every three hours to older children. Stimulating expectorants, with carbonate of ammonia or camphor, were helpful after the first few days. To many patients I gave nothing but maltine and carbonate of ammonia. The latter must be dissolved in water before mixing with the maltine. In this way the irritating effect of the ammonia is obscured, and both food and stimulant are taken every few hours. The older children and adults did well on maltine with cocoa wine, which seemed to be especially adapted for enfeebled nerves.

For slow convalescence, give all the food possible with remedies that aid nutrition, e. g., beef juice, eggs and milk, wine-whey, malt and iron, or cod-liver oil. Embrocations are helpful; alcohol may be used one night and olive oil the next night. The ancients held embrocations in high esteem, but now we are prone to leave them for the athlete and prize-fighter. The sick and feeble are more in need of them. Alcohol was rarely given, as I do not often administer it to children with any disease. In this I agree with the quaint Dr. Harris, who wrote, in 1690, "all Sorts of Spirituous Liquors destroy the natural Ferment of all Stomachs, especially of those of Children; they weaken all the Nerves of the Body and most certainly drive the animal Spirits into all Sorts of Confusion."

Epidemic influenza is a self-limited disease, which we cannot cure if we would. Like enteric, or other fevers, we can only treat symptomatically, and guide through the storm from which we cannot escape. A little prophylaxis may be exercised by closing schools on the appearance of an epidemic and bv discouraging attendance of assemblies, as lectures, theatres, etc.

In review, it appears that influenza is a very old disease, of which scarcely any new thing can be said. The forms of its occurrence are the same as centuries ago. The leopard has not changed his spots. It travels as of old, except faster, as people travel. The mortality is the same, even under nineteenth century treatment, relatively few dying directly of the disease, but many of secondary complications. The aged suffer most and the children least. The latter escape because they rarely have organic diseases. The one thing we have discovered is the cause. But how to meet and annihilate it remains to be demonstrated.

Normal and Surgical Anatomy of the Vermiform Appendix.

Dr. Hadley Williams, (Medical News), from his work on this subject in the dissecting-room, and from post-mortem examination of adults and also the fœtus in the different stages of development of the alimentary canal, draws the following conclusions:

1. The development of the alimentary canal readily explains abnormal positions.

2. At the twelfth and sixteenth weeks there seems to be no difference in size between the base of the appendix and the cæcum.

3. Prior to the sixth and seventh months the cæcum and appendix lie well up in the abdomen, behind the liver or median line.

4. The appendix is nearly always found covered by peritoneum, and in most cases possessed a mesentery.

5. There is generally a well-marked muscular circular coat.

6. The relative measurements between the exit of the appendix and the ileum are pretty constant.

7. The appendicular artery lies behind the distal portion of the ileum, and is accessible to pressure.

8. The wall of the appendix is always formed by the anterior band of muscular fibres from the cæcum.

9. The appendix is readily filled with air from the cæcum. In only a few cases did this fail.

10. From its position in a pocket-like cavity it is accessible to pressure from an impacted large bowel.

11. Fæces collected in the lumen of the appendix do not necessarily set up any pathologic disturbance.

12. Air or fluid injected into the large bowel invariably rotates the cæcum outward, in close relation to the anterior superior spine and crest of the ilium.

13. In this experiment the appendix is often dragged into abnormal positions and twisted on itself.

14. When ulceration takes place, with extraperitoneal formation of pus, two layers of serous membrane are involved if the appendix be intraperitoneal. Anatomically, it is possible for pus to separate the layers of the appendicular mesentery.

15. The lowest part of the abscess-cavity in the recumbent position is on a level two or three inches lower than the incision in front and above Poupart's ligament.

16. An intimate relation sometimes exists between the tubes and ovaries with the appendix. In such a case suppurative appendicitis and hæmatosalpinx were both present, though no distinct suppurating tract could be traced between them.

17. A swelling in the right iliac fossa will give rise to similar symptoms from like anatomic relations to important viscera, vessels, and nerves.

When a large collection of pus has formed in the iliac fossa, a tender spot may generally be felt in the lumbar region on the crest of the ileum, close to the sacro-iliac articulation. A downward incision at this point will be sufficient to evacuate the abscess.—Internat. Med. Magazine.

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Effect of High Pressure on Microbes.

Dr. Roger.—It appears to have been established by numerous experiments that compressed gases attenuate and destroy bacteria, but no attempt had been made to ascertain the effect of simple compression of culture fluids, until I undertook two series of experiments in this direction. I first employed an apparatus capable of producing a temporary compression equal to 250 kilogrammes. Cultures of the staphylococcus aureus, the streptococcus of erysipelas, the bacillus coli, and the bacillus anthracis, both sporulous and non-sporulous, were subjected to five or six shocks in succession without the least effect being produced on the microbes.

I then subjected the same cultures to stronger pressure, varying between 1,000 and 3,000 kilogrammes per square centimetre, that is to say, from 967 to 2,903 atmospheres. Under these conditions, the staphylococcus and the bacillus coli were not at all affected, whereas the sporulous anthrax bacillus was slightly attenuated at 3,000 kilogrammes. The non-sporulous anthrax bacillus was able to bear without ill-effect a pressure of 1,000 kilogrammes, while 2,000, and especially 3,000 kilogrammes killed a large number of rods; those which remained produced in guinea-pigs only a chronic affection, which ran its course in from fifteen to twenty days, whereas the control animal died within three days. The streptococcus was also modified by a pressure of 3,000 kilogrammes, some of the microbes being killed, while those left developed more slowly and were less virulent than before; on being introduced under the skin they gave rise to a curable form of erysipelas, while before compression subcutaneous inoculation produced fatal septicæmia.

The conclusion is that a very curious difference exists between the sensitiveness of bacteria to the action of compressed gases and their resistance to simple increase of pressure. They must be subjected to a pressure of 2,000 or 3,000 kilogrammes before perceptible changes are produced in some of them.—Medical Week.

BACTERIOLOGY.

Effect of Silver on Germs.

Dr. Welch, the bacteriologist for Johns Hopkins Hospital, has demonstrated that germs will not grow in the immediate vicinity of silver. A sterilized silver wire was introduced into a culture, and while the colonies grew as usual elsewhere, immediately about the wire was free from them. Drs. Halsted and Kelly are making use of this discovery by using silver foil in the dressing of aseptic surgical wounds. The foil is placed immediately in contact with the closed incision in sheets about four inches square, and then the other aseptic dressings are applied.—College and Clinical Record.

The Mechanism of Immunity.

Mesnil (Annales de l'Institute Pasteur) contributes the results of investigations into the question of immunity with especial relation to the part played by eosinophile cells in the process. The subjects of the experiments were fishes, esp. Gobio fluviatilis and Perca fluviatilis. He found that the microbes (anthrax), which were inoculated into the peritoneal cavity, always end by being taken into the interior of leucocytes and there destroyed. According to his experiments the microbes, when in the interior of the cells, are still living and virulent; upon this point he gives details of experiments. In the case of the perch, at no time were eosinophile cells found either in peritoneal fluid or in the blood, and this both before and after inoculation. It is, according to Mesnil, therefore certain that in this fish destruction of micro-organisms cannot be brought about by bactericidal products secreted by the eosinophile cells. The work is of considerable importance from a scientific point of view, and supports the views on immunity already enunciated by Metchnikoff.—British Med. Jour.

Two Portals of Entry for the Tubercle Bacillus.

The exposed cavity left in the gum after a tooth has fallen out spontaneously or has been removed surgically, presents an absorbing surface capable of affording lodgment for tubercle bacilli that may be present in insufficiently cooked tuberculous meat or other food. Under these circumstances, tuberculous involvement of the glands of the neck may be the first indication of infection. The second mode of infection is by the entrance into the ear of the child, during labor, of blood of the mother containing tubercle bacilli, with the development, subsequently, of a tuberculous suppurative otitis, which may in turn lead to general infection. It thus becomes a wise precaution to irrigate with an antiseptic solution the ears of children born of tuberculous mothers.

Suppurating Diseases Following Scarlet Fever.

Dr. Frank B. Blaxall (British Medical Journal) has just reported extensive bacteriological investigations relating to the suppurating diseases of the ear following scarlet fever. He considers this sequelæ one of the gravest and most difficult to cure of all those following this disease. The result of his investigations is given as follows: 1. That the organism most potent in the etiology of the otitis media of scarlet fever is the streptococcus pyogenes. 2. That the less chance there is of contamination of the outer air through the external orifice, the more the pyogenic cocci predominate over rod forms, but that prior to perforation of the membrane the occurrence of such organisms is not precluded, since they may ascend from the mouth and air passages. 3. That next to the streptococcus the most important organisms are the staphylococcus albus and aureus. 4. That apparently the diplococcus pneumoniæ of Fraenkel or the bacilluspneumoniæ of Friedlander do not play such an important part in the otitis media of scarlet fever as in that due to other causes.

The Nature of Immunity.

In a lecture delivered before the International Congress of Hygiene, Professor Buchner, of Munich, summarized his conclusions in regard to immunity and immunization. Natural and acquired immunity he considered differed in principle. The natural power of resistance is due to the bactericidal influence of the alexines, certain dissolved constituents of the organism, and to a congenital power of resistance in the tissues and cells of the body. The leucocytes play an important part in this natural protection, not through phagocytosis, but by means of dissolved substances they secrete. The immunity artificially acquired or the immunity acquired in later life is due to the presence of modified bacterial products—the antitoxines. The action of the antitoxines is not directly upon bacterial products, but by modifying the organism these enable it to resist specific poisons. This is essentially the doctrine most prevalent.—Physician and Surgeon.

Streptococcus Infection in Scarlet Fever.

Dr. Rosa Engelmann, of Chicago (Jour. Am. Med. Asso.) has made extended researches on the subject of scarlet fever, collating the views of a large number of authors, and gives the following deductions as the result of her work along this line.

1. A specific scarlet fever germ or toxin is not yet demonstrated.
2. The disease is associated with a streptococcus infection.
3. A streptococcus admitted to be the cause of surgical scarlatina and puerperal fever.
4. A streptococcus admitted to be the cause of erysipelas.
5. The frequent association of the latter with puerperal fever, and it in turn with surgical scarlatina.
6. The relation of idiopathic scarlatina to surgical scarlatina and puerperal fever acknowledged.
7. The identity of the streptococcus pyogenes and erysipelatis advocated.
8. Clinical records showing the association of suppuration, erysipelas and scarlatina in one and the same subjects, suggestive of the parallelism of these three infections and the probable biologic identity of these several streptococci.
9. Clinical differences and varying susceptibility to the one or the other due to heredity, age, anatomico-physiologic conditions, congenital disease, environment, life history of the invading host and its avenues of entry.
10. Disappearance of idiopathic erysipelas from the nomenclature. Analogously, idiopathic scarlatina may meet a like fate.
11. Natural immunity due to heredity and healthy, fully developed structure.
12. Acquired immunity from antitoxins of the disease or through blood-serum therapy, that will revolutionize the treatment of this dread disease.
13. Inunctions disapproved of; antiseptic baths better, meeting anti-bacterial and physiological indications.

The Transmission of Bacilli Through the Placenta

from the mother to the fetus is a question which has invoked considerable interesting discussion among pathologists since the causation of disease by micro-organisms has been definitely settled, for hereupon rests the explanation of many of the apparently hereditary diseases. I say apparently hereditary advisedly, for but few would be willing to assert that any of the known micro-organisms are transmitted in a true hereditary manner either through and within the spermatozogoon from the male parent or through and within the ova of the female. This and this only can be true heredity; all received after their junction must in the natural order of development be acquired.

During the earlier investigations on this subject the placenta was believed to present an impenetrable barrier to the progress of micro-organisms toward the fetus, and various theories were advanced to explain the apparent discrepancies; but more recent experiments especially those of Malvoz and Juequet, have shown that when injuries have been received by the placenta the point of injury may form a point or open door by which pathogenic organisms may gain entry to the fetal organism and there commit their ravages.

The frequency with which the placenta receives injuries can be verified by any obstetrician by a careful examination of placentæ as they are received in his practice, and one would wonder that more cases of apparent heredity do not occur; but rarely indeed can you find an infant that shows unmistakable evidence of tuberculosis, especially at birth. While the books contain vague reference to tubercular fetus, we find but one instance recorded in which a systematic examination was made. In this case bacilli were found in the placenta, but not in such positions as to indicate that they had been received from the mother, leaving the question resting upon the experiments above referred to, making true heredity extremely improbable, apparently possible, but rare.—Columbus Med. Jour.

The Attenuating Power of Sea Water.

Pina (Rif. Med.), has made investigations with regard to the effects of sea water on cultures of the bacillus anthracis, and some observations of the same nature on other pathogenic micro-organisms, such as the typhoid bacillus and the staphylococcus pyogenes aureus. The method adopted was either to mix the microbe with sea water, and after a definite time to use the mixture for purposes of inoculation, comparing the results produced on animals with those produced by the same quantity of culture similarly diluted with distilled water; or else the microbes were grown in media prepared with sea water in place of ordinary distilled water, and any differences either in the mode of growth or in the pathogenic power as compared with the normal noted. By one or other of these methods it was ascertained: (1) That sea water begins to exercise an attenuating action after three hours or thereabouts; (2) that this action goes on increasing for from ten to twenty-eight days, at the end of which time the virulence of the microbes is entirely destroyed, although their powers of growth are not abolished; (3) that this attenuating action takes place quite independently of the action of light on the organisms, and that it is possessed by sea water taken from all depths; (4) that the further one recedes from the shore, the smaller is the number of microbes found in the water; (5) as a practical point, it is important that water used to sprinkle the roads during the summer should be drawn from a point well away from any drainage out-fall, etc., for although the action of sea water is slowly attenuating, a considerable time is necessary before this action can be complete.—British Med. Jour.

The Diphtheria Bacillus.

Abel (Centralbl. f. Bakt. u. Parasitenkunde) relates his researches into the action of winter cold upon this micro-organism. He first draws attention to the propagation of the disease directly from individual to individual, and also by means of utensils, etc. The first is a much more common mode of propagation than used to be admitted. During winter an increase in diphtheria is often noted. Experiments were made by the author from three sets of material. In each case serum tubes of four days' growth protected from light were placed both in the open air and in a room at 15° to 22° C. Sterilized silk threads were soaked in the water of condensation of a well-developed cultivation and dried, some being placed in the open air and some left in the room. It was found that the vitality of both cultures and threads diminished more rapidly in the open air than in the room. The vitality was lost first in case of the infected threads. It was, however, also shown that diphtheria bacilli can retain their vitality for some months in the open air. It is not to be supposed that they could live the winter through if dried in a thin layer; a comparison with the silk thread experiments would show that they could hardly live more than two months. It is still to be ascertained whether bacilli imbedded in masses of mucus are more resistant. The virulence of these bacilli was found not to suffer from the cold. Even after sixty-eight days' exposure they had only lost slightly in virulence, and rather less so than in the case of those kept indoors.—British Med. Jour.

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HYGIENE.

THE WELL WATERS OF OUR FARM HOMESTEADS.

BY FRANK T. SHUTT, M.A., F.I.C., F.C.S.
Chief Chemist of the Dominion Experimental Farms.

The knowledge of the fact that pure water is indispensable for the preservation of good health, is now public property. This is due to the medical profession, our school text-book on hygiene, and the press. The converse, viz: that polluted water is the cause of much sickness and enfeebles health, is also generally recognized as an axiom. Notwithstanding, however, we find many intelligent and thoughtful people totally, and I may say criminally, disregarding this matter of vital importance to themselves and famili s. The number of people who still neglect to take, what we might term, a common-sense view of this important question, and who fail to recognize, as a source of imminent risk to health, polluted water, is, I am afraid very large. During the past six years the Agricultural Department of the Dominion Experimental Farms has examined over 100 samples of water from wells on Canadian farms. As a result of this work—the details of which may be found in my annual reports to the Department of Agriculture—the fact has been impressed upon the writer that the evil of polluted water is widespread throughout our country districts, both in the villages and on the farms. It is because of the well nigh universal apathy exhibited by numbers of our rural population towards this subject, that, being honored with an invitation to present a paper to this convention, I have selected as the subject of my remarks: "Water of Our Farm Homesteads," trusting that the publicity of the proceedings of this convention may awaken a greater interest in those who are more especially concerned in this important subject.

I shall not, on the present occasion, bring forward chemical data to indicate the character and extent of the pollution, nor shall I cite details to show that many cases of typhoid, diphtheria, and other zymotic diseases, have been directly traced to the use of a polluted water supply. Abundant evidence of this character can be furnished by every physician and health analyst. Sanatarians the world over, supported by chemists and bacteriologists, hold that impure water is the chief means by which the germs of many epidemic diseases are conveyed throughout the community. It would be an easy matter to relate a number of instances from my own experience, in which deaths have occurred from typhoid fever and diphtheria in the family, and the water on analysis has proved to be seriously contaminated with drainage or soakage of a pernicious character. In extreme cases, such as these, no doubt the truth is often forced home before the farmer deems it expedient to have the water examined: and the opinion of the analyst but serves as a corroboration of a previously conceived conclusion. I would, however, more particularly impress upon all who have the making of their own supply, what appears to me as still more injurious, because having overlooked the feature of water polluted with excrementitious matter, I refer to this insidious action upon the general health. There can be but little doubt in the minds of those who have had the opportunity of studying the subject, that water containing the drainage of the barnyard or privy is often the cause of many internal disorders. Diarrhœa and indigestion, in one or other of its forms. are in many cases attributable to this action. This is a phase of the subject which I should like to particularly emphasize. I admit that we can, to a certain extent, habituate ourselves to the use of bad water, and that naturally there is a tendency in the animal system to overcome its bad effects, but we cannot overlook the inevitable result that such eventually ends in an impaired state of health and lessening of the body vigor, and making ready of the system for the inroad of still more serious diseases. To preserve robust health and a sound constitution, it is all important that we should use from a pure water supply. We are pretty well agreed as to the communicableness of zymotic diseases through the use of the water which has received the excreta and dejecta of patients suffering from these diseases, but the exact physiological effects of water polluted with decayed matter of animal origin, apart from the action of pathogenic germs that may be present, are not as yet known.

Such decomposing animal matter is readily found in nitrogen and, therefore, particularly susceptible to change. It seems to me very probable that toxic compounds, akin to the ptomaines or cadaveric alkaloids, may in this way be formed, perhaps without the aid of bacteria; and the water thereby rendered dangerous to health. There certainly seems a good deal of evidence to support this suggestion. The purest, most wholesome waters are those that are most free from organic matter, especially that of an excrementitous origin. This is a fact that has received corroboration from the sanatarians. Apart from the already expressed opinion as to the danger that may exist from the formation of noxious compounds, such organic matter is the best pabulum for the growth and development of disease germs, and they find their way into the water.

It indeed seems a little strange that it should be necessary to preach the doctrine of pure water to our rural population, but such nevertheless is the case. The purest water, undoubtedly, is to be found in the country, for it is there that the natural conditions prevail for its occurrence; yet, owing to apathy or ignorance, our farmers and villagers are, as a rule, worse off respecting this natural blessing than those living in the cities. This may be accounted for in part, no doubt, by the fact that every man in the country has the making of his own water supply and the keeping of it pure.

The Dominion of Canada is an exceedingly healthy country and its air and water are of the purest. With the exception of those restricted areas impregnated with alkaline salts, and where droughts occur at times, an abundance of pure water prevails at all seasons. There should be but little difficulty on the greater number of our farms in obtaining an unpolluted supply, but, to quote what I have stated on a former occasion, farm wells are often, for convenience sake, sunk in the barnyard, the stable or kitchen. If not in one or other of these places, we frequently find them situated dangerously near the privy, pig pen or other polluted sources. If any drainage system is in force it is defective and at the best but partially effective. Too often we find no precaution whatever taken against drainage from the kitchen, and household slops find a temporary rest on the ground close to the house, and perhaps near the well. The natural result of this condition of affairs is that much excrementitious and waste matter finds its way into the well. Repeatedly I have found the farm well acting in the capacity of a cesspit and its water, not to speak in exaggeration, to be a dilute form of liquid manure. The only method that I know of for lessening this evil is by instruction.

First: We have emphasized the great danger that lies in using water polluted with excreta or drainage from filth sources. Our people must be taught that not only are the more serious of the germ diseases directly communicated in this way, but that the general health is often affected. That intestinal disorders are brought on and that sooner or later dire consequences must fall upon them or their children by the continued use of a contaminated supply.

Second: We must insist that pure water is necessary to the farm animals as to man, and unless the stock is in good health it cannot thrive properly or profitably, and good health does not follow the use of polluted water. To dairymen and milk, pure water is an absolute essential, since the wholesomeness of milk and its various products is directly dependent upon the character of the water used by the cows and in the manufacture of milk into its products, butter and cheese.

Third: Farmers must be cautioned against sinking wells in barnyards and stables or near the pig-pen or privy. In such places it is only a matter of time before they become to act as cesspits. In light sandy soil drainage travels long distances, more especially where the superficial soil lies, at no great depth, on a bed of clay, and there is the inducing element of a well in the neighborhood. Clay soils are certainly more or less impervious, but these, in such places as I have mentioned, are in time saturated with filth and pollute the water which passes through them.

Fourth: Having the well suitably located and some acquaintance with the character and dip of the strata in the neighborhood, will assist in selecting a safe site. Care should be taken to preserve the precincts free from all accumulation of filth. Periodically all wells should be examined and cleaned for, besides ordinary debris, the bodies of drowned mice, rats and other small animals are often found there.

Fifth: Since a proper system of drainage to our barns and stables is for the most part prohibited by our rigorous climate in winter, the liberal use of absorbents to take away as formed the liquid manure, is strongly recommended. The value of ground gypsum (plaster) for this purpose should be well known, and certainly more commonly used. It fixes and retains in a permanent form the ammonia as it is produced by the fermentation of the urea and at the same time adds to the manure heap plant food particularly suitable to certain farm crops. A cheap, effective and valuable absorbent and deodorizer is found in air-dried swamp muck and peat. Vast deposits of these materials are to be found in many districts.

These absorbents can hold as much as 400 times their weight of water or liquid manure. They contain much plant food, especially nitrogen, which, by its method of composing, is rendered soluble and available. Experience has shown that an exceedingly valuable manure results from its use, for, from a plentiful application in the barnyard, pig-pen and other places where there is fluid excreta to absorb, valuable fertilizing material can be presented which would otherwise be wasted. From a hygienic standpoint it is exceedingly valuable, for it keeps farm buildings and their surroundings clean and healthy.

I feel that I should, in closing this paper make a brief reference to the efficiency of the so-called tests in diagnosing the water. I am aware that many think that reliance may be placed on the results of a qualitative examination by means of the sugar test, nitrate of silver and permanganate of potash used alone or in conjunction. My experience leads me to believe that such results are frequently very misleading.

The amount of precipitate by nitrate of silver when used qualitatively can only be conjectured and from it no correct inference can be drawn unless something is known of the strata of the district and the amount of free ammonia that accompanies it.

The discolorization of permanganate of potash is still more fallacious. Peatty and upland waters will discharge the color from a comparatively large quantity of permanganate of potash, while we often find very little of this salt required by water reeking with the decomposing products of excreta.

The color and appearance of a water cannot always be relied upon as indicating the purity or impurity of the sample. Many waters have no marked odor, that prove on examination to be seriously contaminated. A water may be colorless, bright and sparkling and yet dangerously polluted, while on the other hand, dissolved matter of a comparatively harmless nature may tinge a water with a suspicious yellow color.

There are, I believe, but few cases, and those of very bad and very good waters, where complete analysis is not necessary to a correct diagnosis. In our laboratory we always determine the following chemical data:—Free ammonia, albuminoid ammonia, nitrogen in nitrates and nitrites, chlorine, total solids at 105 C. Oxygen absorbed at 80 degrees Fah. from permanganate of potash, from 15 minutes and in 4 hours phosphoric acid (qualitative) the results returned in part per million.

All farmers wishing an examination of their well waters are furnished with a copy of instructions for collecting and shipping the sample, and emphasis is laid upon the necessity of supplying full information respecting the soil and its environments.

As the agriculturists form a very large proportion of the population, I think it well that we should take an active interest in the health of our people and endeavor by every means in our power to disseminate through the country knowledge regarding the injurious effects of impure water, and the precaution necessary to be observed if pollution of the well is to be prevented. I have no doubt that one of the beneficial results of this convention will be a keener, better and more intelligent understanding on this vital subject—an understanding that will lead to purer water and better health upon our farm homestead.—Food.

Tuberculosis from Animals.

Dr. P. H. Bryce, Secretary of the Provincial Board of Health, Toronto, having made a most careful study presents the following deductions:

1. That tubercular infection has existed in greater or less degree in man, according to post-mortem evidence in a percentage, in some groups of cases, to the extent of from 25 to 50 per cent.

2. That it produces fatal results at different life periods after the first year to an almost equal degree.

3. That the tubercular process, fatal in so large a degree, may nevertheless exist in man and in animals, according to the localization, condition and extent of the tubercle, the constitution of the individual, the environment, as of climate, etc., for an indefinite length of time, the individual finally dying from other disease.

4. That the infection may, however, be present in such instances to an extent sufficient to transmit the disease through the air passages, and possibly in cattle through the medium of the milk.

5. That in many cases the disease may remain in an inactive condition, the man continuing in a fair condition of health, and being able to pursue his ordinary avocation, and the cow appearing well nourished and giving milk in apparently normal quantities; but that in all such cases there is an ever present danger of cold, or other occasion of inflammation setting up general infection of the system with fatal results.

6. That the seat of the disease will largely determine the degree of danger of infection and the direction of its transmission.

7. That in cattle, while the bacilli are probably always present in the milk when the udder is tubercular, yet the bacilli may be present in the milk in a considerable percentage of cases where even post-mortem examination reveals no tubercles of the udder.

8. That in woman, tuberculosis of the mamma is but seldom found.

9. That in cases where tubercle is present in lymphatic glands, in lungs, liver and other organs, the juice of the muscles has been found in some instances to produce infection even where no tubercle of muscular tissue could be discovered.

9. That the inoculation of either men or cattle, when not experimental, takes place in practice always by way either of the respiratory or of the alimentary tract.

10. That such inoculation is dependent upon the extent and frequency of the passage of infective materials into either tract, and largely upon the receptive condition of the mucous membrane in both cases. A healthy mucous membrane offers much resistance to the passage of bacilli.

11. That the infection may begin in the epithelial surface of the air cells of the respiratory tract, and probably, in some instances, also in that of the mucous membrane of the intestinal tract.

12. That when bacilli pass into the system they do so by way either of the blood capillaries or of the lymphatic vessels in the walls of the air passages and the villi of the intestines.

13. When they have passed into the blood capillaries they may produce localized tubercles at the point of inoculation, or may, by passing into the blood current, produce infection at points and in organs distant from the same.

14. That inoculation into the lymphatics, while capable of producing localized infection, tends to transmission of the bacilli to the neighboring lymphatic glands and to the prevention of the progress of tubercular infection of the system.

15. That while inoculation by means of the blood vessels of the intestines may result in tubercles in the liver, spleen, etc., yet inoculation by the chyliferous lymphatic is likely to result in tubercles localized in the lymphatic glands, especially of the intestines and mesentery.

16. That both in man and cattle, by far the most common seat of tubercles is in the lungs and adjacent lymphatic glands; and that this fact, along with the statistical evidence of the frequently repeated cases of pulmonary tuberculosis in persons exposed to the infected air of sick rooms and in cows to that of infected stables, points to the inference that the great proportion of cases of tuberculosis are the results of aerial infection by way of the respiratory tract.

17. That while the great number of deaths from tuberculosis in children, as from tabes mesenterica or consumption of the bowels, points to the probability of frequent cases of infection through milk and other food by way of the alimentary tract; yet the still larger number of cases of lung tuberculosis in children, the relatively small number of calves and young cattle infected with tuberculosis and the comparatively few instances of tuberculous cattle in which the intestines, mesentery or other abdominal organs are found on examination to be exclusively tubercular, point very strongly to the conclusion that infection by way of the intestines is relatively seldom in cattle, and that where it does take place in children it most probably is dependent on the previously unhealthy and congested state of the mucous membrane of the walls of the stomach and of the intestines.—Jour. A. M. Assoc.

To Avoid and to Prevent Consumption.

The Ohio State Board of Health has promulgated (Columbus Medical Journal), the following rules on the subject of tuberculosis:

How to prevent consumption: 1. In the house the expectorations of a consumptive patient should be received on bits of old cloth or Japanese paper and be burned at once or received in cuspidors or spit cups containing a solution of:

℞	Corrosive sublimate	ʒ j.
	Hydrochloric acid	℥ ij.
	Water	1 gallon.

Label, "Poison."

2. The clothing and bedding of the patient should be laundried separately and thoroughly boiled.

3. Sweeping should be done with a dampened broom or with wet tea leaves or sawdust on the floor, and the dust removed from the furniture, etc., with a cloth wet with the disinfectant solution.

4. Dishes, glasses, cutlery, etc., used by the patient should be scalded before using again.

5. It is better for the patient and safer for others that he sleep in a room alone and especially in a bed to himself.

6. The disease may be transmitted by kissing, especially kissing upon the mouth.

7. Admit an abundance of pure air and sunlight to the patient's room.

8. If the house is damp use proper means to secure dry foundation walls and basement.

9. On the street the patient should either use an expectoration flask (many such are made) or cloths or paper, to be burned as soon as possible. If a handkerchief must be used, place it in boiling water or in a disinfectant solution before the expectoration can dry.

To avoid consumption: 1. Eat meat cooked well done, as this will destroy the germ. Boiling will destroy the germs in milk, and young children, who are especially prone to tuberculosis of the bowels, should be given only boiled milk.

2. A mother with consumption should not suckle her child, as she may infect it through her milk.

3. Do not move into a house or sleep in a room in which a consumptive person has died of or been sick with consumption until it has been properly disinfected.

4. Avoid as far as possible occupying any length of time with a consumptive person a badly ventilated room, car or vessel.

5. If a tendency to the disease has been inherited, be specially guarded against all sources of infection. In addition, select an outdoor occupation as free as possible from dust; use every means to secure a good physical development, particularly of the chest and lungs; select a dry soil for habitation and have living rooms freely ventilated and well exposed to direct sunlight.

6. In selecting a mate in marriage choose one free from any inherited or tuberculous taint.

THERAPEUTICS.

A CONTRIBUTION TO THE THERAPEUTICS OF DIABETES.

BY J. BLAKE WHITE, M.D.,
Physician to the City Hospital, New York.

While the constitutional conditions on which depend the three usually recognized diatheses—the lithic, oxalic and phosphatic—have been somewhat determined, that of the diabetic has never yet been clearly defined.

The lithic occurs in persons of florid appearance and robust habit "bon vivants"—who suffer from irritable gastric dyspepsias, and is also associated with a gouty or rheumatic tendency or with some forms of chronic skin disease, especially psoriasis.

The oxalic is characterized by the formation of oxylate of lime in the urine, and appears in individuals of defective assimilation dependent on exhausted nervous energy, arising from overwork, mental strain or venereal excesses.

The phosphoric is seen chiefly in the aged, or in the prematurely old of anæmic condition and shattered constitution.

In the largest proportion of cases where the diabetic diatheses occurs, no exciting cause can be assigned. A great degree of vagueness obtains concerning its origin; but among those causes alleged to have given rise to diabetes are numbered: shock, cerebral disease, exposure to cold, drinking cold water while in a heated state, mental emotion, blows on the face of thorax, sexual abuse, and, I might add, abuse of light causing retinal shock: all showing implication of some part of the great sympathetic nervous system, either within the cranium, final cord or its peripheral distribution.

I am aware that I give utterance to a novel view when I call attention to the above statement, and declare that my study of the disease especially inclines me to the conviction that diabetes should be classed among the neuroses, and that its varied phenomena result by reflexes from the nervous system just as shock may temporarily arrest the secretion of urine. To my mind the disease obviously arises in the sympathetic chain which controls the secretory function of the kidneys. A wide and tempting field for investigation and discussion is thus opened, which, I regret the limited time at my disposal prevents my entering upon.

Many believe that diabetes depends on some digestive impairment, the intestinal canal being particularly concerned. In this connection it is very interesting to observe that the classic Dickson regarded the disease as a result of "some obscure vice of digestion and assimilation." If it primarily accounted for the presence of sugar in the urine, it would seem as if remedies addressed to a correction of this impairment would promise the best success in treatment. This view of the subject appears to have been taken by many inasmuch as a review of the therapeutics of diabetes shows a remarkable leaning to remedies well known to possess a controlling effect on the function of the gastro-intestinal tract.

Though my experience inclines me to favor similar treatment, my interpretation of the effect, however, is that it is realized rather through the nervous system than through any direct local consequence which antiseptics may exert in the digestive canal.

Harley gives us quite a practical view of the subject by verifying two great divisions in diabetes: the first, including cases due to excessive sugar formation; the second, those due to diminished saccharine consumption. The first class of cases he considers most amenable to treatment, the second, especially fatal on the principle, no doubt, that it is much easier to overcome the processes which result in sugar formation, than to get rid of the accumulation of sugar after it is once generated, and the formative process well established.

Whether or not the impairment which excites excessive saccharine formation originates in the liver, or is superinduced bv some other functional disturbance re-acting on the hepatic system, is of little practical importance in the treatment. We must have in view the necessity of withholding in one case material which facilitates sugar manufacture by the liver; and, in the other, the administration of appropriate medicaments to overcome that condition which permits of perverted function.

Remedies which have been found efficacious in some instances, have been such as could hardly be supposed to exercise any direct effect on the liver. Intestinal antiseptics like antipyrine, salol, and peroxide of hydrogen have been advocated as successful remedies. Nicolaier tried salol in seven cases of diabetes and reported that its administration diminished the amount of sugar without dietetic restrictions, which appears to indicate (although he does not attempt to explain it) that while the salol may overcome intestinal fermentation, it nevertheless corrects in some inexplicable way to the process of sugar formation.

Professor Bufalini found a strictly albuminous diet far more tolerant when Thymol was administered, the good effect being undoubtedly dependent on the well known antiseptic influence of this drug; but it is not explained that these effects are due to either a direct or a reflex action upon the intestinal nerve filaments. The development of sugar takes place in the stomach itself where it has been found, and it has also been detected in the intestines and the fæces.

There can be no question of the advantage to be attained by a judicious restriction of diet in assisting the treatment, and I have already laid great stress upon the fact that internal antiseptics play a most important role in the management of this disease. When due to excessive sugar formation the dietary is somewhat modified, as compared with that in cases associated with mal-assimilation. In the latter instance the body must be supplied with foods so easily digested that emaciation is retarded while at the same time the vital powers of the patient are sustained. In such cases therefore, fats in the form of butter, cream and fresh milk should be permitted, and it is sometimes advisable to give cod-liver oil, the form of emulsion being best suited to the pancreatic complication of the disease. Liquor Potassae or Soda Carbonate dissolved in glycerine help to emulsify the fats and render them more readily absorbed along the intestinal tract.

To combat debility or very great loss of flesh, authorities agree that assimilable forms of saccharine substances should be given, believing that if we supply such nutritive elements when thus demanded, the chances of their assimilation are greatly enhanced and physical improvement proportionally follows; for the depression is supposed to be due not to sugar in the blood so much as to impaired power of its absorption.

Laevulose, the analogue of diabetic sugar, has been recommended by Kulz when indications for an added saccharine diet are present; also in those cases of excessive sugar formation where the subjects manifest physical and mental failure the severe dietary restrictions should give way to a less guarded regimen, permitting brown bread, fats, fruits and green vegetables.

The saline purgative and the alkaline non-purgative waters are serviceable to diabetics; the former acting by reducing saccharine supply in removing from the intestines ingested food before it has time to be absorbed and furnish the liver with material for the manufacture of sugar; the latter acts as any alkaline medicament in emulsifying fatty foods and rendering them easy of digestion.

The narcotic and anodyne class of drugs have been more or less used and commended, but no rule can be laid down as to which it is best to use in all cases. When one preparation of the same drug, as opium for instance, will not succeed, another must be substituted.

Codeine, when tolerated, has long been in favor and it is to be preferred to morphia or crude opium because of its less disturbing effect on the digestive function. It is stated that Croton Chloral in combination with a vegetable narcotic has given surprising results. When it is desired to overcome nerve depression, great benefit may be expected from strychnine, nux vomica, quinine, nitro-glycerine, phosphoric acid and cocaine in various combinations.

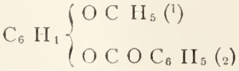
I will not attempt to give in detail the numerous remedies which have been from time to time suggested, but I would like to mention the pancreatic preparations tested by Drs. Mackenzie and Neville Wood. These preparations proved, in a general way, somewhat beneficial, but they had no effect in lessening the amount of sugar in the urine; they, however, served to modify thirst and reduce the quantity of urine passed.

Dr. Hale White concluded that neither the feeding on fresh pancreas nor the injecting hypodermically the liquor pancreaticus was of such material benefit as to be a commendable mode of treatment.

From internal antiseptics, however, combined with judicious dietary restrictions I have realized the most beneficial results. The remedy which has not commended itself to me being Benzosol or Benzoyl guaiacol which has also been highly extolled by Piatowske in three valuable papers. My own experience with this drug fully justifies its use and corroborates the observations of this distinguished authority. He found that, under this treatment, severe cases were transformed into mild ones, while in some patients the sugar entirely disappeared; the quantity of urine excreted was lessened and the specific gravity lowered. As to its mode of action Piatowske closes his report of cases treated with the reflection that it is far easier to propound theories than to justify them, and therefore refrains from stating whether or not the effect depends on the remedy's action on the pancreas, liver, blood or the nervous system, which last Marfuri held to be the first stimulated.

Whatever its action and on whatever function exercised, Benzosol certainly manifests a most potent influence in controlling elaboration of sugar; and, as it is tasteless, as well as odorless, and at the same time a safe remedy to employ, it merits a high place among our therapeutic resources.

For the benefit of those who may not be familiar with the preparation I will add that Benzosol, from (Benzoyl-ortho-oxyanisol) is a compound of benzoic acid and guaiacol and was first prepared by Dr. Bongartz. When pure it presents a colorless crystalline powder; odorless and tasteless, and melts at 50° C. The formula is:—



$$C_6H_4\begin{cases} OCH_5\,(^1) \\ OCOC_6H_5\,(_2) \end{cases}$$

It is insoluble in water, barely soluble in hot glacial acetic acid, but readily dissolved by chloroform, ether and hot alcohol. In the gastro-intestinal canal, but chiefly in the intestinal portion, Benzosol is transformed into guaicol and benzoic acid. The dose gradually increased from one or more grains to 15 grains daily occasions no disagreeable effects, but it is apt to excite diarrhœa if carried up to one drachm daily. I have been in the habit of prescribing the remedy in capsules, commencing with a moderate dose of a grain or two, and gradually increasing it to 10 or 15 grains daily. In addition to lessening the manufacture of sugar, the effects observed have been, increased appetite, improved digestion and assimilation, with a perceptible stimulation of the nerve centres. In four diabetes patients I noted a total absence of sugar in the urine after three months' treatment, with proportionate improvement in the general health.

Though a marked benefit is derived from the use of Benzosol alone, the best results are to be looked for in cases where a restricted diet is carefully followed with the additional administration of Carbonate of Lithium and Fowler's Solution in Vichy every morning as recommended by Dujardin-Beaumetz.

It will thus be seen from the foregoing remarks that the use of Benzosol in the manner suggested serves the following useful purposes:

It stimulates the nerve centres.

It increases the appetite.

It lowers specific gravity of urine.

It controls the excretion of urine and lastly modifies sugar formation, thus lessening the amount excreted.—American Med. Surg. Bulletin.

A NEW AND IDEAL STYPTIC ; A NEW COMPOUND OF ANTIPYRINE AND TANNIC ACID.

BY ROSWELL PARK, M. D.
Professor of Surgery, University of Buffalo.

In the Medical News of December 15 and 22d, 1894, I rehearsed some of my experience with Antipyrine as a styptic in surgical practice, stating that I had for years used a 5 per cent. solution as a spray sterilizing the water before making the solution. This I had no hesitation in spraying upon any surface, peritoneal, cerebral, or other, from which parenchymatous oozing was taking place to an extent complicating the operation or jeopardizing the success of an ideal dressing. This therapeutic note attracted at least sufficient attention to lead to its pretty general use by surgeons in various parts of the country, from many of whom I have heard commendatory remarks, and from none of whom I have every heard of disappointment in its use. The present note is to corroborate the favorable esteem in which I have long held this procedure, and to state that I have since resorted to it more widely and more generally for styptic purposes. Thus, I have no hesitation in using it in the urethra, or even in the bladder, in cases of hematuria proceeding from either of these locations. Even in the eye it may be used without fear, preceding its use by that of weak solution of cocaine, though in this location the antipyrine-solutions need not be made so strong. On the other hand, it may be used in much larger percentage when the 5 per cent. solution fails to accomplish the purpose; even when small vessels spurt, compression for a few moments with iodoform-gauze or acetanilid-gauze sopped in this solution will often be effective.

As every physician will realize, there occur cases of bleeding—for instance, from the nasal cavity or from divided bone—in which even these solutions will be ineffective. My present object is to call attention to the combination of Antipyrine and Tannic Acid, in solution, by which there is precipitated an intensely agglutinative and cohesive substance, of to me unknown chemic composition, which offers the most ideal styptic for certain purposes that I ever dreamed of. This combination I hit upon by accident, and first resorted to in a case of apparently intractable hemorrhage from removal of adenoid tissue in the vault of the pharynx, in which I was called in consultation by my colleague, Dr. Hinkel. He happened to have at hand a bottle of alcoholic solution of tannin, while I was provided with antipyrine in powder. The case being emergent, I suggested the combination of the two styptics, and added the dry powder to the solution. To our surprise, there was formed at once a gummy mass, at first flocculent, which quickly cohered, the result being a combination, the stickiness and adhesiveness of which quite astonished us. A small sponge dipped into the fluid containing this material in suspension was inserted into the post-nasal space, and hemorrhage instantly was checked not to again recur.

I have since experimented with these materials, and have found that they may be united in almost any proportion with the formation of the gummy mass, and would suggest that the substances be mixed in proportion to the emergency of the case, and to the desire for little or much of the resulting compound. It is possible by adding strong solutions, or of pouring the powder of one into the solution of the other, to precipitate so much of the agglutinative composition as to make a gum that may be placed about the margin of the bleeding bone —for instance, in operation upon the cranium. Or a small piece of sponge or cotton sopped in this material may be forced into a toothsocket, or in various other ways its use may be made to result in benefit and satisfaction. There is but one attendant difficulty; that it is so remarkably cohesive that when the time comes for detachment or separation of the tampon it is difficult to remove it. It may be even necessary to wait for sufficient time for the formation of granulations and separation by natural processes.

I strongly commend to surgeons experimentations with these solutions, and their own determination as to the strength in which it may be best to use them.—Medical News.

THE PRELIMINARY COMMUNICATION ON CITROPHEN.

BY DR. R. SEIFERT.

In his preliminary communication that appeared in No. 26 of the Deutsche Medicinische Wochenschrift, Dr. Benario very evidently intends to claim priority for a medicament composed of phenetidin and citric acid. Such combinations, however, have been used for antipyretic and analgesic purposes in the Warsaw hospitals for many months past, and the results there obtained have been published in extenso by Dr. Leon von Nencki and Dr. Josef Jaworski in the Gazette Lakarska of May 27th, 1895, and the following numbers.

There are various combinations of citric acid with phenetidin, all of which have been prepared by the chemical factory of Dr. F. von Heyden's successors. One molecule of citric acid can be combined with three molecules of phenetidin, giving us citrophen*; but it can also be combined with two and with one molecule, giving us entirely different substances. Nencki and Jaworski have proved that the most useful of these combinations is that which contains the largest number of intact acid groups. This Apolysin, which contains two complete citric acid groups.

Apolysin is also the most freely soluble of the series. It dissolves in 55 parts of cold water and in less than one part of warm water. There are metallic salts of Apolysin; but it is the combination with quinine, caffeine, etc., that deserve especial attention.

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* Apolysin is not in any way related to the citrate of phenetidin (citrophen) with which Dr. Treupel (Deutsche Medicinische Wochenschrift, 1895, No. 33) has experimented. This is poisonous, like all the phenetidin salts ; whilst Apolysin is practically non-poisonous, being not a simple salt of phenetidin, but phenetidin permanently combined in an anilid-like form. The addition of carbonate of soda to Treupel's citrate of phenetidin causes the immediate separation of phenetidin as a free poisonous base ; but the phenetidin cannot be separated again from Apolysin.

There are errors in Dr. Benario's paper, due possibly to printer's mistakes. But the fact remains that citrophen is very insoluble, requiring no less than 13,000 parts of cold water for its solution.

Apolysin has the following advantages over phenacetin and the other remedies of that group:

1. It is very soluble, and hence more readily and completely absorbed. Its action is therefore quicker and surer.

2. There are no by-effects, even when large doses are given. The well-known cardiac depressant effects of phenetidin, which are distinctly seen in phenacetin, are not to be found in Apolysin. This is probably due to the similarity of Apolysin to citric acid, and is in accordance with the law discovered by Professor M. von Nencki (in the St. Petersburg Institute for Experimental Medicine), that the entrance of an acid group in a poisonous substance lessens or removes its poisonous properties. The chemical difference between Apolysin and phenacetin consists in just such entrance of acid groups.

In consequence of its non-poisonousness Apolysin can be given in large doses for the attainment of a marked and rapid antipyretic and analgetic effect without any danger of concomitant effects.

Headaches of Extra-Cranial Origin.

In the discussion following the reading of a paper on this subject, by Dr. Frank Woodbury, Dr. T. H. Stucky, of Louisville, Ky., said: "The paper just read is to me one of unusual interest and importance. When we take into consideration the many causes of headache, and look back upon the treatment for the past twenty years for the condition by opium or its alkaloids, chloral, the bromides, etc., and remember their tardiness of producing relief, the danger of having our patients become drug-habitues, 'tis indeed, a fact that antikamnia has proven a godsend to the people as well as the profession. One fact is evident, and that is that antikamnia has almost entirely displaced opium, its compounds and derivatives. If it has done this and nothing more, its mission is a great one and its usefulness thoroughly established. 'It does not depress the heart's action; it does not relieve pain. An extended use from its first appearance on the market has served to increase my confidence in its great value.'"—Medical Record.

The Treatment of Some Mild Febrile Affections.

A cold in the head is usually a trivial affair; yet it is often attended with so much discomfort and even actual distress that it may become the source of more complaints than much more serious diseases. Strange to say, notwithstanding the great progress in medicines within late years no certain cure for this affection has yet been brought forward, and the physician is forced to content himself with relieving the most unpleasant symptoms. Among these the most distressing are the headache or pains over the eyes and the feeling of stiffness in the nose due to the intense hyperæmia of the nasal mucous membrane. The administration of a full dose of quinine, in connection with a hot drink and a warm foot-bath is frequently recommended as a means of aborting a commencing cold in the head, but in many persons the large dose of this drug required gives rise to more discomfort than the disorder itself. A far more pleasant and equally efficient remedy is Phenacetine, given in five to ten grain doses. This reduces the feverishness, and by diminishing the hyperæmia relieves the headache, stiffness and other discomfort resulting therefrom. Even if the attempt to abort the cold be unsuccessful the patient will be rendered much more comfortable by the administration of Phenacetine in cases characterized by severe headache or neuralgia. The same remarks apply to the treatment of acute pharyngitis and tonsilitis; in these conditions the vague pains experienced in the head, back, and limbs, which are often present at the onset, the feeling of irritation and swelling in the throat, which result from the hyperæmia, are usually greatly ameliorated by a few doses of Phenacetine. Aside from these beneficial effects this remedy exerts a general sedative action, quieting restlessness and inducing sleep. At this time of the year, therefore, when owing to the variable weather colds are common, Phenacetine deserves a prominent place in the physician's armamentarium.

Peroxide of Hydrogen. .

Dr. J. P. Parker, in the Annals of Opthalmology and Otology, says: I have used peroxide of hydrogen quite extensively for cleansing discharging ears, the nasal and accessory cavities, and have tried all the brands of the preparation in the market, and once thought one manufacturer's make as good as that of another, and bought the cheapest as a matter of economy, but recent experience has taught me that the difference in quality is greater than the difference in price. After an unpleasant experience with a solution of peroxide of hydrogen which severely injured the mucous membrane, I bought and examined, chemically, a bottle of each preparation of $H_2 O_2$ in the market, and was surprised to find so much difference. Some are useless, and others worse than useless because they contain too little available oxygen and too much free acids (phosphoric, sulphuric, hydrochloric). I now order Marchand's (medicinal) exclusively because I find it contains the desired quantity available oxygen and not enough free acid to be objectionable, and its keeping properties are all that could be desired.

By inquiry I learn that Marchand's is the preparation that is used by almost all surgeons, and it is considered by them the standard.

My personal experience with peroxide of hydrogen confirms entirely the statement of Dr. J. P. Parker, I have used exclusively Marchand's brand until lately, when I experimented with hydrozone. Then I gave up entirely the use of peroxide of hydrogen and use hydrozone on account of its strength, which cannot be compared with any other brand, even Marchand's. I must say that the results which I obtained with hydrozone are most gratifying.—(Ed.)—Times and Register.

After the most careful experiments, Drs. Ernst and Peters arrive at these conclusions concerning the infectiousness of milk: "First and emphatically, that the milk from cows affected with tuberculosis in any part of the body may contain the virus of the disease.

"That the virus is present whether there is disease of the udder or not.

"That there is no ground for the assertion that there must be a lesion of the udder before the milk can contain the infection of tuberculosis.

"That, on the contrary, the bacilli of tuberculosis are present, but with no discoverable udder lesions."

It will be noticed that these investigators, although working in widely different fields, have made one point in common which seems to be of great significance so far as its propagation is concerned, that is "that the juice of the muscles has been found to produce infection when no tubercle of muscular tissue was found, but when it was found in other structures of the body."—Jour. Am. Med. Assoc.

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Infectious Diseases In Animals.

It becomes more clearly evident with increasing knowledge regarding the sources and transmission of infectious diseases, that many of these scourges are derived directly from animals. The discovery of these facts was a great step in preventive medicine. The frequency with which the bovine species suffers from tuberculosis and the undoubted frequency with which it is transmitted to man is well known.

It is not so well known that diphtheria is also frequently transmitted by animals. McCollum, in the Boston Medical Journal, has recently called attention to the frequency with which cats and sometimes dogs suffer from diphtheria. He says that the disease manifests itself in these animals not by the existence of marked membrane in the throat, but by the condition of the lungs simulating pneumonia. The animal has a peculiar strident cough; has anorexia and loses flesh rapidly. At the bacteriological laboratory, recently, cultures taken from the throats of a cat and a dog that had been exposed to diphtheria revealed the presence of the bacillus of diphtheria. This organism disappeared from the throat of the cat in about two weeks.

The same writer says also that cows may have diphtheria, and when suffering from the disease may be a source of infection. Klein traced an epidemic of the disease to milk from cows that gave unmistakable evidence of being ill of diphtheria. Small areas of false membrane were found on the teats of these cows. Cultures made from these lesions contained the diphtheria bacillus. Cats fed on the milk from these cows contracted diphtheria. While there is no positive evidence that the milk in the udder contained the germ of the disease, there is every reason to believe that the milk was contaminated by the hands of the milkers.

Dr. Nusshoeme of England, has also made observations upon the same subject. He has recently reported an outbreak of diphtheria which seemed to have clearly originated from cats. His attention was called to cats by the fact that in a part of Brighton, inhabited almost solely by the laboring classes, there had occurred a group of cases of diphtheria in the course of a single fortnight, which pointed distinctly to the operation of some local cause. The patients comprised both children and adults. They did not attend any particular school; there was no community of milk supply; personal infection from case to case could not be traced; and no sanitary defects were found in the affected houses. But in each instance there was a history that the household cat had been ill, and in several families the child who was specially fond of the cat was the sole victim of diphtheria. The illness of the affected cats had not been carefully observed, but it included one or more of the following symptoms: a bad cough, difficulty in swallowing, discharge from the nose, and marked emaciation. In some of the houses, the cat had simply been observed to be wasting. Four emaciated cats were secured, and necropsy, including a bacteriological examination was made, but with entirely negative results. The illness of the cats in question dated from at least a month before the opportunity for examining them arose, so that the negative result is not surprising.

Dr. Klein, in his investigation into cat diphtheria, found that the diphtheria infection produced in the cat an acute lung inflammation, the kidneys becoming degenerated in the manner known in man as the large white kidney. The condition of the household cat is worth inquiring into in all such local outbreaks, and it may be well to remember that if the cat can be secured for anatomical examination, even in the acute stage of the disease, there will probably be no exudation in the throat, but only marked pneumonia.

The Bureau of Animal Industry of the United States Department of Agriculture has for some time carried on investigations on this subject. Bulletin No. 8 of the Department contains a summary of these investigations. Part of the infectious diseases from which animals suffer are not easily transmitted to man. This bulletin refers especially to diphtheria in fowls. The occurrence of the disease in pigeons is well known, and there are many authentic cases reported in which children have contracted it from fowls. The bacilli in fowls differ somewhat from those of diphtheria in the human subject. These differences are now coming to be regarded as resulting from surroundings and necessary peculiarities of habitat. There seems reason to believe that the germs in both cases belong to the same family.

Ulcer of the Stomach.

The dietetic treatment of ulcer of the stomach is of the greatest importance. Few diseases in fact show the results of properly regulated diet more decidedly. A diet should be chosen which is bland and unirritating, which does not excite the acid secretions of the stomach, which remains but a short time in the stomach, which does not tend to cause extension and peristaltic action, and which does not tend to undergo rapid fermentation. At the outset of treatment, it is usually wise to employ rectal feeding for a few days. Food in small amounts may then be administered by the stomach.

The best diet in most cases is unquestionably milk. Its value has been proved beyond doubt. If the patient will tolerate it the milk should be thoroughly peptonized. If he objects to this, simple milk and lime water may perhaps be taken. It should be administered at frequent intervals and in not too large quantities. Four ounces every two hours are usually sufficient. If the milk is not tolerated or does not agree, whey may be administered for a time, but it should be remembered that it contains but little nutritive material. Buttermilk may sometimes be substituted for milk but the acid in some cases causes too much irritation. Milk diet should not be abandoned until it has been thoroughly tested and until every preparation has been given adequate trial. If a milk diet is impossible, scraped raw meat should be tried. This may be given alone lightly seasoned, or it may be given in broth. Expressed beef juice is an admirable article of diet in such cases and sometimes proves of the utmost value.

Weak tea and coffee may be given in small amounts but alcohol is contra-indicated. If hemorrhage occurs, the stomach should receive complete rest for several days, and nutrition should be maintained by means of nutritive enemata. A rigidly restricted diet should be persisted in for at least a week after all symptoms have disappeared and the return to an ordinary diet should be made slowly and with great caution.

Are There Too Many Physicians in America.

The Medical News in an editorial article recently discussed the time honored question as to whether we have in this country too many doctors. The article, which is a long and exhaustive one, contains many most sensible and rational ideas. Among other things it shows very clearly the fallacy of the argument that because the numbers are unusually large in proportion to the population, that the profession is necessarily overcrowded. We have one physician to every 500 inhabitants. In England, there is one to 2000, in France, one to 3000, and in Germany, one to almost 4000.

The scattered population of this country necessarily requires a larger number of physicians than would the same population living more compactly. A physician in a closely inhabited region might possibly attend to the medical needs of three thousand people. They would certainly have to call the doctor less frequently than does the average American. With the American custom of calling a physician early, it is certainly a fact that one man could not properly attend so large a number of people in any except very dull times.

A little hamlet requires a doctor's services, and a doctor is usually found located in the smallest of villages. He might find it necessary to travel over a radius of a hundred miles to reach three thousand people. The man who supplies the needs of a remote settlement of three hundred people is just as necessary and is no more superfluous than the man in the city who may supply three thousand.

We believe, in fact, that the large number of physicians in America is to a certain degree creditable and would thoroughly agree with the writer already referred to, that the number of physicians is a good index of the intelligence of a race. And as civilization becomes more complex and the whole field of preventive medicine—scarcely surveyed as yet—is added to our domain, a still higher proportion of skilled, intelligent advisers will be demanded by the community.

We do not allege that there is no over-crowding of the profession in the United States, but we do believe that the excess of doctors is not as great as a mere statement of relative numbers might lead one to suppose. The intelligence and comparative affluence of the people of this country as compared with the peasant class of Europe, are undoubtedly elements in producing such a large proportion of physicians.

A Symbol of Medicine.

There is at the present time under discussion the question of an appropriate symbol for the medical department of the army. It seems somewhat strange that no such symbol now exists. The most appropriate design suggested would seem to be a cross similar to that known as the Geneva Cross. The Boston Medical Journal points out the appropriateness of this design, particularly as the Geneva Cross, of the Red Cross Society is now recognized the world over as indicative of medicine in its best practical application. We have here, therefore, a proper symbol of the healing art, fitting in its origin, significance, and actual use by civilized humanity.

It suggests that the ordinary design might be improved upon by lengthening, very slightly, the arms of the cross; so that the square forming the centre would be a trifle smaller than the corresponding part of the actual Geneva Cross. This variation is recommended for the reason that in the common form of "red cross," the great mass of color in and about the center causes an apparent lack of proportion, by making the middle square look larger than it really is. This optical illusion would be corrected by the suggested modification.

It certainly seems desirable that medical officers in time of war or emergency should be distinguished by some characteristic symbol. For use on military uniforms, the cross might be some handsome shade of red, made of durable material set in gold.

Dujardin-Beaumetz has made the attempt to classify cases of functional indigestion. Patients with increased secretion of gastric juice do best on a vegetable diet with an abundance of fruit and milk. Those with deficient secretion of gastric juice do better on meat proteids, the amount being adapted to the capacity of the patient. Peptonized foods must sometimes be employed and milk is usually permissible. When giddiness or other sympathetic affections are present the food must be very digestible and bland. It should consist chiefly of vegetables, fruits, milk and well cooked farinaceous substances.

We have been much gratified during the past few months at again being able to publish in these pages the admirable translations from the French by Dr. H. McS. Gamble. Prolonged and distressing illness prevented him for many months from furnishing the translations which were so acceptable to our readers. Not only is Dr. Gamble to be congratulated on his restoration to health, but the readers, also, of the Journal.

BOOK REVIEWS.

The Principles and Practice of Medicine, Designed for the Use of Practitioners and Students of Medicine. By William Osler, M.D., Fellow of the Royal College of Physicians, London; Professor of Medicine in the Johns Hopkins University. Second Edition. New York: D. Appleton and Company. 1895. (Pp. XVI.—1143.) Price $5.50.

The first edition of this well known work was received with great favor by the medical profession. The author is one of the most strictly scientific men of the profession and is at the same time extremely practical. His vast clinical experience, particularly that gained as physician-in-chief of the Johns Hopkins Hospital, enables him to speak with authority upon the broad field of general medicine. The first edition of his book was very popular because it presented so accurately the latest ideas of modern medicine. It was regarded as an exponent of the advance school. The second edition can not be regarded as less so.

It differs from the first edition very materially upon many points. The following statements taken from the preface show the changes that have been made in the book and are also interesting in showing in brief outline the advances that have been made in medicine during the past three years.

The article on typhoid fever has been thoroughly revised to date, and that on malarial fever in large part rewritten. The subject of diphtheria has been completely recast, and extended from eleven to twenty pages. The article on septicæmia and pyæmia has been rearranged and largely rewritten. Short descriptions of the bubonic plague and of the foot-and-mouth disease have been added. New matter will also be found in connection with cholera, syphilis, tuberculosis, and others of the infectious diseases. In this section, in describing the stage of incubation, the report of the Clinical Society of London has been adopted.

The articles on gout and diabetes have been extended. A description of infantile scurvy and of the hæmorrhagic diseases of the new-born has been added.

There has been added an account of eczema of the tongue and of leukoplakia, and under chronic tonsilitis will be found additional details regarding the injurious effects of mouth breathing. The methods of clinical examination of the stomach have been omitted, since they more correctly belong to, and are more fully given in, manuals of diagnosis. The subject of appendicitis has been completely rewritten and much extended. A new section has been added on affections of the mesentery, and under diseases of the liver a description of the dislocations and deformities of the organ. Under localized peritonitis a new section will be found on the subphrenic variety.

In sections IV and V many minor additions and corrections and additions have been made. In writing on angina pectoris, it was a pleasure to be able to give the credit of the 'intermittent claudication' theory to that distinguished old Glasgow professor, Allan Burns.

The subjects of anæmia and leukæmia have been revised and rearranged. In the articles on Addison's disease and on exopthalmic goitre and myxœdema will be found references to the new investigations.

A brief account of anuria has been added, and a number of minor corrections and additions have been made.

As a text-book on general medicine Dr. Osler's work is unquestionably one of the best at the command of the general practitioner.

Pediatrics, The Hygiene and Medical Treatment of Children. By Thomas Morgan Rotch, M.D., Professor of the Diseases of Children, Harvard University. Illustrated. Philadelphia: J. B. Lippincott. 1896. Pp. 1124. Price $6.50.

This work is a vivid reminder of the importance which preventive medicine has assumed in recent years. The province of pediatrics as a branch of medicine lies largely in the domain of prevention. By detecting and correcting slight abnormalities in the child the pediatrist aims to prevent their increase to the detriment of the adult which is to be. Two hundred and eighty-four pages of this work, or about a quarter of the whole great volume are devoted to the care and feeding of the healthy infant. Another point which cannot fail to impress even the most careless reader is the beauty and profusion of the illustrations. The great inventions of recent years, which render it possible to reproduce at comparatively small outlay, absolutely correct and very clear representations of any condition which the author wishes to describe, have added to the value of books as a means of conveying knowledge almost as much as the perfection of the microscope has added to our fund of medical knowledge. The author of the work in question has availed himself of this aid most generously.

As Dr. Rotch has done so much toward rendering infant feeding a subject of definite knowledge and reducing it to something of a science in itself by his study of percentages, we would expect to find in this section of his book a most thorough and comprehensive study of the subject. Nor are we disappointed in this. The chapter of Feeding presents for the first time in full, the great advances which have been made in this branch of medicine through the establishment of milk laboratories for the preparation of modified milk in accordance with physicians' prescriptions. For the first time we find food prescribed in percentages with the same exactness with which prescriptions for medicine are written. A very serious failure in this part of the work, however, is the fact that the author has not been sufficiently concise and has not summarized. The subject is left, therefore, too indefinite and not as practical for every-day use as it might have been made.

In the diseases peculiar to infancy and childhood, or the period from birth to puberty, are of a type so characteristic as to merit, and even demand, special study for their successful treatment. Physicians of eminence and ability have devoted their talents to pediatrics exclusively; and the fruits of their labors are gathered into treatises at once copious and exhaustive. While this is true, the publishers have perceived the need, both to students and practitioners of medicine, for a more compact one-volume text-book or treatise on pediatrics, whose scope, by including only the essential, shall be sufficiently full, exhaustive, and authoritative without filling up its pages with discussions of theoretical and mooted questions.

Professor Rotch's work meets just this demand, and embodies the results of his experience for the past ten years, both as an original investigator and also as a clinical professor of Diseases of Children. The treatment is therefore from the standpoint of the lecturer, in which the clinical feature is prominent.

An adequate knowledge of diseases in early life can only be obtained by a thorough acquaintance with the practical points of anatomy and physiology peculiar to the child at different ages. Impressed with the truth of this fact, the author has presented these important branches of the subject with greater fulness than they have been treated in any other work.

The Physicians' Visiting List (Lindsay & Blakiston's). Published Annually. Philadelphia: P. Blakiston, Son & Co. For 25 patients per day or week, $1.00.

This well known Visiting List presents several improvements in the new edition for 1896. More space has been allowed for writing the names and to the memoranda page; a column has been added for the amount of the weekly visits and a column for the ledger page.

To do this without increasing the bulk or price, the reading matter and memoranda pages have been rearranged and simplified. The publishers announce that before making these changes they have personally consulted a number of physicians who have used the book for many years, and have taken into consideration many suggestions made in letters from all parts of the country.

No Visiting List has been used to such an extent or for so long a time as this. There is none better suited to the work of the general physician, in keeping easily and systematically his business accounts and memoranda.

Materia Medica and Therapeutics. A Practical Treatise with Especial Reference to the Clinical Application of Drugs. By John V. Shoemaker, A.M., M.D., LL.D., Professor of Materia Medica, Pharmacology, Therapeutics, and Clinical Medicine, and Clinical Professor of Diseases of the Skin in the Medico-Chirurgical College of Philadelphia; Physician to the Medico-Chirurgical Hospital, Philadelphia. Third Edition, Thoroughly Revised. Philadelphia: The F. A. Davis Co. (P. ix.—1108. Extra Cloth, $5.00; Sheep, $5.75.)

The third edition of this excellent work is published in one volume instead of the two in which it formerly appeared. Numerous changes have been made to bring the work in accord with our most recent ideas upon the subjects with which it deals. The skill of chemists and the zeal of clinicians have during the past two years, introduced many new preparations to the profession. New applications of the older remedies have also in many instances been discovered. Since the publication of the second edition the field of usefulness of many medicinal substances has been greatly enlarged. Based upon increasing experience, much additional matter has required insertion in the description of acetanilid, antipyrin, creosote and its derivitives, hydrogen dioxide, salophen, trional, dermatol, new naphthol and phenol compounds. Among the most recent compounds upon which new articles or sections have been written are tolysal, tolypyrin, salocoll, salacetol, chlorphenol, bromphenol, ethylendiamine silver phosphate, tropacocaine, formaldehyde and formalin, dulcin, tannigen, etc. The subject of treatment by means of animal extracts, secretions, or juices, and immunizing serums or antitoxins has been rewritten, and gives a fair presentation of the present state of knowledge concerning the value of these agencies in combating disease. The enumeration of preparations has been made to accord with the United States Pharmacopœia of 1890.

Pregnancy, Labor, and the Puerperal State. By Egbert H. Grandin, M.D., Consulting Surgeon to the New York Maternity Hospital; Consulting Gynæcologist to the French Hospital, N. Y.; and George W. Jarman, M.D., Obstetric Surgeon to the New York Maternity Hospital; Gynæcologist to the Cancer Hospital, N. Y. Illustrated with Forty-one Original Full-page Photographic Plates from Nature. Philadelphia: The F. A. Davis Co. P. viii, 261. Cloth, $2.50.

This is a companion volume to the well known work by the same authors on obstetric surgery. It will undoubtedly prove as popular as did their first volume. The last decade has witnessed not alone progress in the practice of obstetrics, but also change in methods of instruction. The clinical teacher is no longer satisfied with grounding his students in the theory of the art, but he aims, as far as his opportunities will allow, to give his classes that practical instruction which alone enables them to follow understandingly the normal course of pregnancy and of labor, as also to recognize and cope with emergencies. The teaching of obstetrics therefore, has very properly become more practical and less theoretical. This is the inevitable outcome of that higher medical education which aims at thorough grounding in every science before the student is deemed competent to undertake practice. Such methods are especially necessary to ensure proficiency in obstetrics. Instruction in this department has undergone greater change during the past few years than in almost any other. Practical knowledge is now considered a requisite where theoretical knowledge was formerly deemed sufficient.

To-day the major part of obstetric practice is founded on fact. Where divergent views obtain, the weight of authority is on the one side or the other side; at least, it is safe to teach that which commends itself to the majority of teachers, even though in a very short time further experience may cause modification in the teaching. The general practitioner, amidst the activities of his calling, when in search of information, wishes to secure it without loss of time entailed in searching through a mass of theory and of statistics.

The work in hand has been prepared on these grounds. It aims to be a guide to practice and is clinical in its methods. Where facts warrant it, it is very direct and positive in its statements. As a teaching manual the authors have been successful in producing an excellent one.

This is indeed the age of pictures. The present work is very copiously illustrated. The illustrations are admirably executed and most of them fulfil the design intended. Where the authors have attempted, however, to illustrate internal operations and manipulations the pictures fail to be of material value. In other words, they are pictures rather than illustrations. On the whole, however, they add extremely to the value of the book. The book is on the whole an admirable one and illustrates with great accuracy and fidelity modern obstetric methods, as taught by the most competent teachers.

A Manual of Syphilis and the Venereal Diseases. By James Nevins Hyde, A.M., M.D., Professor of Skin and Venereal Diseases, Rush Medical College, etc., Chicago, and Frank H. Montgomery, M.D., Lecturer on Dermatology and Genito-urinary Diseases, and Chief Assistant to the Clinic for Skin and Venereal Diseases, Rush Medical College, etc. With forty-four Illustrations in the Text and Eight Full-page Plates in Colors and Tints. Philadelphia: W. B. Saunders, 1895. Pp. 8-17 to 618. (Price, $2.50.)

This manual, the authors tell us, has been prepared for the purpose of meeting the special needs of the student and of the practitioner, rather than of the expert. In fulfilling this design they have succeeded extremely well. The book supplies in concise form but with considerable detail all the practical facts connected with the study and treatment of the diseases which it considers. Disputed points have been somewhat carefully avoided and but few references are employed. The illustrations are good, and have been judiciously selected. The authors have apparently not been burdened with a desire to exhibit many pictures whether they illustrated anything or not. They have produced a very convenient and reliable manual well adapted for general reading or ready reference.

MEDICAL NEWS AND NOTES.

It has been computed—on somewhat the same principle that was applied by Dr. Benjamin Lee to the smallpox epidemic in Philadelphia—that there is a money loss, from consumption alone, in England amounting to 72,000 for every 1,000,000 children born.

The following advertisement appeared recently in an English lay journal: "Skin Disease.—A Specialist, who cures every description of Skin Disease, will give a liberal commission to ladies and gentlemen who will introduce patients. Every information given by addressing Specialist."

The man who intends to be a surgeon should not only make a special study of surgical anatomy, but should do a considerable amount of practical laboratory work in bacteriology, pathological histology, and experimental pathology and physiology.—Billings.

Dr. Alexander Stone says: "Doctor, whatever you do, do not forget to take your vacation. I can assure you that you will be able to do more work, better work, make more money, enjoy life fuller and live longer, if you work eleven months in the year, than you would if you labored for twelve." But perhaps some of the doctors' hearers feel as the tramp did when advised to take three regular meals a day.—Record.

There are one hundred and eighty sanitarily defective schools in Chicago, and the city spends about $4,000 annually on an athletic overstrain fad called "physical culture," whose chief purpose seems to be to provide "professional foreigners" of the ward-heeler type with an occupation. The money wasted on this "physical culture" humbug could be advantageously employed in remedying the sanitary defects of a few schools.—Med. Standard.

The receipts of the Journal of the American Medical Association had been: From advertisements, $12,545.91; from subscriptions, $1,569.75; from reprints, $1,674.67; from cash sales, $203.21; from insurance on account of fire, $579, making a total of $16,572.54. The expenditure amounted to $29,344.97, so that the cost of the Journal to the Association was $12,772.43; of this amount, $6,291.24 was expended for new machinery. The Journal of the American Medical Association now possesses a plant worth $10,000.—British Med. Journal.

A Chemical Detective.—A Budapest manufacturer has informed the police that he possesses a powder with which thieves can be caught. Having recently made the unpleasant discovery that his cash-box was plundered day after day, and failing in all his attempts to catch the thief, he applied in his dilemma to Mr. Telek, professor of chemistry at the Franzstadt Commercial Schools, and the latter gave him a powder which he sprinkled over his cash every night before leaving the office. This powder has the peculiar effect of dyeing the skin blue, the color being intensified by washing, while it resists the application of soap. On the very first day the manufacturer noticed a deficiency of eight crowns in the silver cash-box. He at once called his employes together and ordered them one by one to steep their hands in a basin full of water, got ready for the purpose. One of the men was very loath to follow the example of his comrades. At last he consented, when, no sooner had he dipped his hands in the bowl, than they turned dark blue. His employer stepped up to him and said: "You are the thief!" and the man confessed.—New England Druggist.

A Revival of Hindu Medicine.—The educated natives of India intermittently advocate, through the native press, the resuscitation of indigenous and time-honored methods of treating disease which have fallen into disrepute and disuse (Ex.). The merits of ancient drugs and of primitive practices are on such occasions vaunted as being better in themselves and better adapted to the people and circumstances of Hindustan than exotic systems and medicines. It appears that dispensaries have been established in the native states of Tranvancore and Mysore, for the purpose of giving the natives of these territories the benefits of Hindu medicines, which are considered more congenial, cheap and efficient than foreign medicines. Foreign surgery is allowed to be infinitely superior to native, and no attempt is made to compete with that. It is recognized that native doctors are, with few exceptions, ignorant and uneducated, and it is proposed to teach them "chemistry, physiology, hygiene and other kindred subjects."—St. L. Med. & Surg. Jour.

American Medical Review.—This is the most recent candidate among medical journals for professional favor. It represents a new idea in medical journalism. It is designed apparently upon the plan of that very successful journal the Review of Reviews. It proposes to give a comprehensive epitome of the medical literature of the month. It consists chiefly of concise abstracts covering the various fields of medical research. It also contains an index medicus of articles appearing in the medical journals of the previous month. Dr. Daniel Lewis, one of the best known surgeons of New York, is the editor and the R. N. Plummer Company is the publisher. These names are ample assurance that the new review will be maintained as a high class medical journal.

The International Medical Annual.--It is announced that E. B. Treat, has in press for early publication the 1896 International Medical Annual, being the fourteenth yearly issue of this eminently useful work. Since the first issue of this one volume reference work, each year has witnessed marked improvements and the prospectus of the forthcoming volume gives promise that it will surpass any of its predecessors. It will be the conjoint authorship of forty distinguished specialists, selected from the most eminent physicians and surgeons of America, England and the Continent. It will contain reports of the progress of Medical Science at home and abroad, together with a large number of original articles and reviews on subjects with which the several authors are especially associated. In short, the design of the book is, while not neglecting the specialist, to bring the general practitioner into direct communication with those who are advancing the Science of Medicine, so he may be furnished with all that is worthy of preservation, as reliable aids in his daily work. Illustration in black and colors will be consistently used wherever helpful in elucidating the text. The price will remain the same as previous issues. As a book of reference it is, in practical value for the general practitioner, head and shoulders above any work of the kind ever published.

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Disinfection of Mouth and Throat.

Szanas in experimenting with colored fluids, found in gargling that only the soft palate and the tongue come in contact with the solution used, and consequently they are without value. He recommends the use of bonbons made from saccharic and resin guagaci, and claims that in their use the entire mucous membrane of the mouth and throat is brought into contact with the disinfectant used. Their value is proven in that bacteriological examination of the secretion of the mouth show it to be free from bacteria, after the use of the bon-bons, when they had been present before.—Archives of Pediatrics.

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ORIGINAL ARTICLES.

REMARKS ON GOITRE, WITH REPORT OF CURES.

BY DR. JOSEPH A. WHITE, A.M., M.D.

Professor of Ophthalmology, and Associate Professor of Otology and Laryngology, University College of Medicine, Richmond, Va.

John Beattie, age 46, a stonecutter by trade, consulted me in December, 1894, about his eyes. I prescribed the needed glasses, and noticed he had a very large goitre which I took to be a fibro-cystic enlargement of the thyroid gland from a very cursory examination. There were several cysts, one in the right and two in the left lobe of the gland. I asked why he did not have it treated, and his reply was that he was so discouraged by the failures in the past he had given up, although it was steadily increasing in size. It had begun about fifteen years previous as far as he could recollect, and for over twelve years he had been a marked deformity. He had tried iodine injections, tapping sac with an aspirator, the constant current, and, as he expressed it, the "electric needle."

On June 27, 1895, he returned and asked me what could be done with the goitre, as it was becoming an impediment to respiration because of compression of the windpipe. Having had very satisfactory results with iodide of potassium by cataphoresis in goitrous cases, I commenced treatment with this plan. Up to Wednesday, July 27, I had used cataphoresis twelve times with some slight diminution of the tumor and improvement to respiration. On July 17th, I opened the central cyst at the bottom, and drained off a quantity of dark brownish muddy fluid, similar to what is seen in ovarian cysts, etc. The sac was washed out until the returning liquid was clear, and a small quantity of iodine injected. The opening was kept free by packing with gauze. For several days the sac was washed out and packed daily with considerable improvement. On July 27th I cut into the left cyst from the top, and passed the knife across and out at the opening made in the lower part of the central cyst, which was followed by a discharge of the same fluid and venous hemorrhage. Iodine was injected, and a silver drainage wire was inserted, entering one opening and out through the other. Antiseptic gauze was packed into the cyst. The next day he was unable to come to my office, being confined to bed. He was visited twice daily, and the sac was washed out with peroxide of hydrogen and bichloride of mercury. On the 31st, his neck was enormously swelled, especially on the right side—all the lymphatics being involved—and deglutition was almost entirely arrested. I at once cut into the right cyst and drew off a great quantity of fluid. This sac was connected with the others, and a drainage wire with packing inserted. Every day the sacs were washed out, disinfected and packed. Quinine and stimulants were used internally. On August 4th, his temperature was up to 104°, pulse 126; and on the 5th and 6th, 101°, and in a few days normal. He was then put on potash which was increased to 60 grains three times a day. By September, his neck was reduced almost to its normal size. Some little thickening of the parenchyma of the gland remained, although the cyst had entirely disappeared. For this, cataphoresis was continued, and you saw his condition two weeks ago when he presented himself to this Academy. From wearing a 17 inch collar, he was wearing a 14½ inch. The contour of the neck was perfectly natural. The thyroid cartilage was prominently defined, and, with the exception of the scars of the incision, there was little or no sign of trouble of the thyroid gland.

The above case is an interesting one in its results, and on account of the prominence which the thyroid gland has assumed in medical journals, the last year or so, especially in relation to the use of the extract of the thyroid glands of animals in the treatment of myxedema; although the subject of goitre itself, seems to have received but little attention. I find in looking over the medical journals of the last year or so, that very little is said in relation to this matter; most references to the thyroid gland being in connection with the treatment of myxedema. Goitre, however, whilst receiving but a short chapter in most text-books on surgery, is a subject of considerable importance. We have different troubles of the thyroid gland, such as acute thyroiditis; bronchocele or goitre of different forms, such as follicular, fibrous, fibro-cystic and cystic; and that peculiar complex of symptoms, known as exophthalmic goure.

I have no doubt that the reason that we only occasionally find writings upon this subject in the regular medical journals, is due to the lack of knowledge of the functions of the thyroid gland, and the difficulty of explaining etiologically, the various changes that take place. Some recent investigations into the functions of the gland by Hurtble, Eulenberg and others, may result in a better understanding of the pathological alterations. Hurtble reports that the colloid substance in the follicles is produced by the protoplasm in the epithelial cells, and that the secretion of the gland consists in the formation of this colloid substance. It is supposed that pathological changes in the gland are due to some deterioration of this normal secretion. Probably, some evidence of this is found in the fact that the same treatment (the use of thyroid extract, for example), decreases the enlarged gland, and improves the bad results which come from the absence of it, such as myxedema. Another corroboration probably, is the well-known fact that cretinism is found in connection with both hypertrophy and atrophy of the gland. Eulenberg thinks that the constitutional symptoms of exophthalmic goitre may be the direct toxic effects of absorption into the veins of the increased altered secretion of the follicles, which produces chemical changes in the constitution of the blood. If this theory is correct, the nervous origin of exophthalmic goitre must be discarded. That it is tenable, is shown by the fact that nearly the same symptoms are produced by the artificial introduction of thyroid secretion in excess. But these theories in regard to the etiology of the pathological changes of the thyroid gland are somewhat speculative as yet, and require further investigation and confirmation.

The treatment of troubles of the thyroid has received lately considerable impetus. We might divide it into medicinal, electrical and operative.

MEDICINAL.—The medical treatment is by the internal administration of suggested remedies, such as iodide of potash, fluoric acid, thyroid extract, etc., and locally, by the introduction in the substance of the gland of iodine, iodoform, etc. Every one is familiar with the iodine treatment. It is the oldest, and has held its ground longer than any other, with varying success. Probably 90% of follicular and fibrocystic goitres are reduced in volume by this treatment, but few radical cures are recorded. Garé, of Tübingen, reports, however, very great success with the injection of iodoform, one part to seven of oil and either. Kocher, of Berne, has used thyroid extract in twelve cases, all of which were improved, some cured. Bruno, of Tübingen, also tried feeding, in twelve cases, with fresh calf thyroid. Four or five cases were cured, and the others with the exception of three much improved.

ELECTRICAL.—Under this heading I would include three methods of using electricity. First, galvanism, by passing the continuous current through the gland, both poles being on the tumor; second by electrolysis, and third, by cataphoresis. With the use of the constant current I have had little or no experience. It had been suggested for the reduction of the different kinds of glandular enlargements, and has been used with varying success. Electrolysis I have used in follicular and fibrous goitre. The negative pole is generally passed into the growth, and a current of ten milliamperes is turned on and continued for about five or ten minutes. This can be repeated in from three days to a week, according to the amount of irritation set up; the strength of the current being increased until we can use as much as forty or fifty milliamperes. Gradual reduction of the growth takes place under this treatment, and a number of cures are recorded as its result. It is of very little service, however, in cystic goitre, because we can't get the effect of the negative pole in the alteration of the tissue of the growth as we do in the more solid tumors. It has been suggested to tap the cyst, wash it out, fill it to distension with chloride of sodium solution, and by this means receive the full effects. With electrolysis, from four or five to a dozen or more sittings are required.

CATAPHORESIS.—The third method, that of cataphoresis or the introduction of remedies by the direction of the electric current, has been in my hand a very satisfactory treatment, particularly in follicular goitre. I can record two or three cases in the last eighteen months where I have had the most satisfactory results from the use of iodide of potash by this method. I use, attached to the positive pole, a metal disc which is covered with wet chamois or cotton upon which is packed as much powdered iodide of potash as it will hold. This is covered over with a thin pledget of wet cotton and applied to the growth. The negative pole is held in the hand, or applied to the back of the neck, or between the shoulder blades. I have seen very little notice of this method of treatment. The only case that I know of recorded, was one reported by Dr. McGuire two or three years ago, in The Virginia Medical Monthly. In the goitrous enlargement or bronchocele, which one observes in young people, young girls especially, about the time of puberty I don't know any more satisfactory treatment. It is true that this form of bronchocele occasionally manifests itself only at the time or during the period of menstruation, and very frequently gets well of itself. I am not, however, referring to this form, but to those cases of persistent enlargement of the gland, which not only is seen during the menstrual period, but is present more or less all the time until active measures are instituted for its relief. I have seen cases of follicular bronchocele that have become very large in women because no attention was paid to it in the stage where it would swell up and go down as it were on the theory that it would get well of itself. One of these was very large and persisted for several years, and was cured by the application of iodide of potash by cataphoresis. This case I have already mentioned, and it is one known to most of you. I am satisfied that further investigation into this matter of applying remedies will show it to be of great value. In regard to operation, I am satisfied that in cutting open the cysts, as I did in the case above recorded, that I was exposing this patient to as great danger as if I had removed part of the gland. This was evidenced by the symptoms that developed.

Partial thyroidectomy, or stournectomy as some call it, is recommended by many authors for follicular and fibrous goitre. Stoom, of Christiana, has reported quite a number of operations with success. He also advises enucleation of the cyst for cystic goitre.

Morris, in The Lancet, Jan. 5, 1895, reported two cases of multiple cyst of the thyroid gland, such as the case before reported in which he also practised incision with satisfactory success.

Marsh, in The Birmingham Medical Review, reports five cases of bronchocele operated on for urgent pressure symptoms (all the cases being of comparatively short duration) in which he had good results, and he advises removal of the isthmus and as much of the lateral lobes as may be needed to relieve pressure which is followed by atrophy of the rest of the gland.

Brooks reports two cases of partial thyroidectomy followed by success.

Operation has also been suggested and performed by quite a number of authors for exophthalmic goitre on the ground that it is a hyperplasia of the gland structure, and that the nervous symptoms are due to the toxic effects of the altered secretions, and a number of cures are reported. Greenfield's article in The British Medical Journal, Dec., 1893, is probably the best of these contributions. All operators, however, have come to one conclusion—that complete removal of the gland is unjustifiable, and that all operations are more or less dangerous, death on the table having resulted in a number of cases from collapse. It is doubtful that any deaths have resulted from hemorrhage, although in some cases the bleeding is hard to control because of the difficulty of applying ligatures to the vessels whose walls are in such a condition that ligatures will tear loose. To arrest the bleeding by packing is not satisfactory and may be dangerous. I have no doubt that during operations on the thyroid gland, some of the fatal results were due to prolonged pressure on the pneumogastric nerve. If proper care is taken in performing the operation, the bleeding arrested as the operation proceeds, and the field kept as aseptic as possible, I believe the operation tion of partial thyroidectomy would be comparatively safe. Care must also be taken not to injure the recurrent laryngeal nerve. This operation has been successful in a great many instances, but there have been some failures—as is the case with all operations in surgery.

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The editor of a western medical journal has been spending some months in England, and, in a letter to a professional friend in New York, dated July 12th, he says: "Supposing the points of excellence in a medical center for the purpose of post-graduate work to be abundance of clinical material, enthusiastic and skillful teachers, accessibility of the various hospitals, clinics, schools, or laboratories, and systematic arrangement of dates and hours so that different courses and branches can be reached in succession—then London is ahead, for instance, of New York, in only one point—that is, the first one mentioned. There is any amount of material; there is more than is necessary for teaching purposes. Upon the teaching capabilities and the other points I should not like to individualize or particularize. There are some excellent men and some admirably conducted schools and hospitals in London. But the opinion I have expressed is upon the general average, as practitioners visiting there to study find it. I met numbers of American doctors in London who, having tried both, said that they could do better in New York. At one time there were six Americans together taking surgery at one of the greatest London hospitals who unanimously expressed the opinion I have just stated. With the advantages now presented by New York, Baltimore, and Philadelphia, and not forgetting some rising centers farther West, there is no need for Americans to go abroad for the purpose of study. I am satisfied that fifty per cent. if not more of the trips abroad are made for éclat. Once change the fad and there will be a wonderful falling off in the number of medical pilgrims to Europe. And if the stream of good United States dollars, which now pours into the coffers of European hospitals and the pockets of numerous Privat Docents and other functionaries, was diverted to similar receptacles located on American soil, it would give a notable and well-deserved encouragement and impulse to medical research and teaching on our side of the water. Our Government does not support medical schools; the profession and the public must. Americans ought to think of these things.—N. Y. Med. Jour.

TRANSLATION.

ETIOLOGY OF TYPHOID FEVER; CONTINUED FROM JANUARY NUMBER.

By H. McS. GAMBLE, Ph. D., M.D.,
Moorefield, W. Va ,

C.—Modes of Transmission of the Typhic Bacillus.

HOW DOES THE BACILLUS OF EBERTH INVADE THE ORGANISM?

Let us notice in the first place that the bacillus may emigrate outside of the body of a typhoid patient by different routes: 1st. With the fecal matter; 2d, with the urine; 3d, with the blood derived from intestinal hemorrhages; 4th, sometimes with the products of expectoration; 5th, by the opening of foci in which the microbes have accumulated and multiplied.

But it is above all. almost exclusively, one might say, by the stools that the typhoid patient disseminates the germs of the disease.

After their emission, the stools may soil the linen, the bodies of the patients, the hands of the nurses, the basins, all objects with which they have been in contact. Then the virus diffuses itself into the air, is mingled with the dust, the smoke, the water, etc.

It becomes necessary, therefore, for us to study the different vehicles that allow the typhic germs to penetrate into a sound organism in order to infect it..

1st. Transmission by the air.—The air has been considered for a long time as the chief agent of propagation of the disease. The present opinion is that this mode of transportation of the typhic germ is quite rare. Several observers have, however, demonstrated its possibility.

Dr. Devaltz (of Eaux Boumas) has given an account of a little epidemic of typhoid fever quite characteristic from this point of view, according to his opinion. The fecal matters of the first patient, who had arrived with the signs of dothienenteritis in the locality in which no anterior case had been observed, had been thrown into the closets near which three persons slept who were alternately attacked. Dr. Devaltz believes all the more in this case, in the propagation by the air, because the water of the locality was examined with care and no micro-organism was discovered therein.

M. Fernet has called again to mind quite a striking fact. A young ladies' boarding school in which the sanitary condition was excellent, was suddenly seized with an epidemic of typhoid fever. No other cause could be invoked except the disengagement of miasms which had occurred eight days previously, when the drain from the sink was emptied. This drain had received, the preceding year, the dejections of a boarder attacked with typhoid fever. It is probable by the mechanism of the aerial transportation that the disease is propagated in what is designated under the name of cases of direct contagion of interior cases. Thus might be attacked the hospital attendants, the nurses, the parents who have attended some of their family and inhaled the dust coming from the stools of the patients in shaking their clothes for example so often soiled with dejections which have been dried by the heat of the body. The role of the linen in the dissemination of typhoid fever is, besides, proved by the fact that the laundry women, especially those of the hospitals, are very much exposed to the disease.

Certain mess epidemics in the barracks are also examples of contamination by the atmosphere. The most convincing proofs in this respect are those of M. Kelsch and those of Dr. Chour, a Russian military surgeon. M. Richardiere has seen in his service at the Charity hospital a case which seems to be very demonstrative. A patient attacked with syringomyelia and treated in the ward for several months, contracted typhoid fever. But there had entered the hall a little while before four typhoid patients; one of these even occupied the bed immediately adjoining. There were no other interior cases to be reported. The aerial transportation seems to be all the more incriminated here since the disease commenced by pulmonary manifestations. The intestinal phenomena were of a mild character. The patient recovered.

Unfortunately the absolute and direct proof of the transmissibility of typhoid fever through the air is lacking since no one has yet isolated the pathogenic microbe in the suspected medium.

However, some experimental investigations have been made for the purpose of elucidating this mode of contagion. Mm. Miffet, Lapiere and Bordas have seen that the air bubbling upon liquid typhic cultures may carry away germs. On the other hand, M. Secard, finding some of the bacilli of Eberth in the water from which he collected the air expired by typhoid patients, concluded from this that the expiration of patients is capable of disseminating specific germs into the surrounding atmosphere. But these latter facts are in direct contradiction with what is known of the purity of the expired air.

An objection has been made to the contamination by the air. It has been asked if the inoculation is done directly through the aerial routes, and if the respired air does not deposit bacilli upon the lips and in the mouth, whence they are swallowed. (Arnold).

In spite of this very subtle interpretation the transmissibility by the air seems sufficiently well established by many facts. It is at all events, be it known, an infrequent mode of propagation.

Second. Transmission by Water.—It is chiefly to the investigation of the bacillus in water that bacteriologists have directed their efforts. Nors and Michael in Germany, Chautemesse and Widal in France, were the first who isolated it in potable water. Since then successes have been numerous. Thoinot has found it in the water of the Seine, taken at the bridge d'Ivey. Antoine and Morat, Mace and Marie-Davy have demonstrated its presence in well water. M. Loir, upon examining the water in his lodgings at the Institute Pasteur, in 1887, discovered typhus microbes in large numbers.

Numerous and indisputable facts moreover demonstrate the role that the water plays in the propagation of the disease. We will mention some of them.

The village des Monts, reports Dr. Baraduc, is divided into two groups of habitations separated by a distance of about 150 metres, upon the side of a hill; these two groups of houses are supplied by different streams. In November 1878, two children in the village above were attacked with typhoid fever: eight months later, fourteen cases declared themselves in the village below. All the contaminated houses derived their water from a spring, of which the overflow served as a public lavatory in which the linen of the first two patients had been washed. The spring was condemned and not another case of dothienenteritis was observed.

A very fatal epidemic reported by Dionis des Carrières, prevailed at Auxerre in 1882; the disease reigned exclusively in the quarters that received the water brought in a close conduit from the spring of Vallan, situated at a distance of four leagues from the city. It was discovered that this spring was polluted to the point of running over by infiltrations from a barnyard in which the manure pile had received the dejections of a typhoid patient the month before. Since 1881, cases of typhoid fever have been very frequent in the city of Zurich, which is supplied by water from the lake, contaminated to the level of the water. At the time of the epidemic of 1884, the disease prevailed only in the quarters supplied by the municipal service of the city. A group of houses in Auersihl, located in the midst of a quarter severely tested, was absolutely spared because it was not connected with the municipal conduit. This same year, the Normal School of Unterstrap, in which spring water is drunk taken from the public fountains, escaped the disease. The 1st and 2nd of April, some pupils, who had gone out for the examinations, drank water furnished to the subscribers. Soon eighteen of them were attacked with typhoid fever.

The city of Plymouth, in Pennsylvania, was ravaged by typhoid fever, in the month of March 1885. A portion of the inhabitants drank water from the Susquehanna river, others were supplied by a mountain spring. These latter alone were attacked. It was subsequently ascertained that there had been a case of typhoid fever, a month before, in a house situated near the spring. The discharges had been thrown upon the frozen ground: they had been washed away in the first thaw by the rains which had carried them toward the spring and the latter had thus become contaminated.

At Vienna, remarks Mosny, since spring water has replaced the water of the Danube, typhoid fever has almost completely disappeared. During the severe winter of 1887, it was found necessary to distribute the river water in certain quarters; an epidemic immediately broke out in the parts of the city supplied by the river water.

In the greater part of these accounts, the fact of the pollution of the water by typhoid injections has been rigorously demonstrated. Ordinary stains by whatever kind of fecal matter, can in point of fact have no direct influence. The pathogenic element being the sole determining cause of typhoid fever, we must admit the contamination of the water by the special microbes contained in the typhous matters in order to comprehend the transportation of the disease and the eruption of numerous cases at distances often very remote.

The presence of the bacillus of Eberth in the waters thus polluted ought evidently to remove all doubts about the mechanism of the propagation of dothienenteritis. So this proof has been furnished in several epidemics.

In the month of August, 1786, of twenty-four persons who had come to Pierrefonds for recreation and who occupied three contiguous houses, twenty were taken sick almost simultaneously with typhoid fever and four of them succumbed. Prof Brouardel demonstrated, in the course of the inquiry, that the wells of the three houses were contaminated by infiltrations from sinks. During the preceding years, there had been unquestionably several cases of the disease in the vicinity. and a month also before the epidemic, a convalescent from typhoid fever, arrived from Paris, had had a relapse in one of the houses mentioned. Chantemipe examined, from a bacteriological point of view the water of the suspected wells, and obtained, upon phenicated gelatine, numerous colonies of the bacillus of Eberth. These micro-organisms did not exist in any of the other wells of Pierrefonds.

The same year Mm. Dreyfus-Brisac and Widal reported a house epidemic observed at Menilmontant. Five persons deriving their water from a neighboring water-plug were attacked with typhoid fever; the typhous bacillus was found in this water with its usual characteristics.

In the latter days of the month of August, 1886, an epidemic of typhoid fever appeared suddenly at Clermont-Ferraud. The little city of Mont-Ferraud, two kilometres distant, was stricken at the same time, and in both foci the epidemic presented an absolutely similar march. At Royat and at Chamaliere, which are nearly the same distance from Clermont, only a few isolated cases were observed which were contracted at Clermont itself. But, Clermont-Ferraud and Mont-Ferraud drink the same water, whilst the little cities of Royat and Chamaliere have each their own supply.

The inquiry then was directed to the two contaminated cities, which are supplied by two springs, and established the following facts:

The conduit which brings the water of the principal one of the two springs, that of Gros-Bouillon, headed near to Royat, was in a very bad condition at several points and could have been contaminated in its course by matters from sewers that were not closed or by water from the public wash house. Towards the middle of the month of August, a typhoid patient from Lyons, had been treated in a house situated a few metres from the water conduit. The dejections had been thrown into the imperfectly closed sewer and his linen had been washed in the wash house of Royat. Twenty days later the epidemic broke out at Clermont-Ferraud.

M. Brouardel has reported to the Congress of Vienna some extremely curious facts relative to Lorient. The city is composed of two parts: One occupied by the marine, the other by the civil population. The same waters are not used by the two groups. In August and September the fecal matters are spread over the fields adjoining the springs that supply the barracks. Two months later, every year, an epidemic breaks out among the soldiers.

Attention has been drawn at Paris to the relations that exist between the distribution of the water of the Seine and the appearance of epidemics of typhoid fever. Chantemesse, Widal and Regnier have published graphic pictures which clearly establish the fact that the typhous morbility and mortality are in constant relation with the substitution, at certain periods of the year, of the river water for the spring water.

M. Beckman, chief engineer of the water department of the city of Paris, has protested against this view of the question and has produced contradictory statistics. But Mm. Brouardel and Chantemesse have reminded him of the necessity of taking account of the period of incubation of typhoid fever, which corresponds exactly with the time that elapses between the moment at which they commence to substitute the spring water for the river water and that when the first cases of the disease appear. We thus see that there is an undeniable co-relation between the periods at which the river water is distributed and the curve of the admissions into the hospitals of patients attacked with typhoid fever. It is three or four weeks after the distribution of the water of the Seine that the curve invariably is elevated; it is three or four weeks after the suppression of this water that it is seen to fall. Moreover, this suppression of river water does not immediately cause every source of infection to disappear, for the bacillus must persist a greater or less length of time in the conduits; it has been discovered in fact in the reservoirs five or six weeks after it had been carried there by the water.

Thus, the manifest relations many times demonstrated between the appearance of an epidemic and the contamination of the water supply, show, in the most conclusive manner, the preponderating part that ought to be assigned to the drinking water in the etiology of typhoid fever. It would be, consequently, through the digestive routes, above all, that the bacillus might penetrate into the organism, and the theory of aerial transportation, formerly so prevalent, would be applicable only to a relatively restricted number of cases.

But if the introduction by the intestinal canal is, so to speak, the rule, may not one incriminate other ingesta than the water of alimentation ?

Propagation by milk is very commonly admitted in England.

Recently, again, Harrington reported an epidemic which made its irruption in November and December, 1886, at Cambridge, Massachusetts; it was proven that fifty-eight of the seventy-five families attacked received their milk from the same milkman, and the investigation showed that there had been two cases of typhoid fever on one of the farms that sent the milk to the city merchant.

On the other hand, cases of typhoid fever provoked by the ingestion of the flesh of diseased animals have been reported. The epidemics of Audelfingen, of Kloten, of Birmenstorf, of of Wurenslos of Spreitenbach, all in the canton of Zurich, are celebrated in this regard.

These facts have not, however, brought conviction to all the savants, and the autopsies of Walder themselves—made at the time of the epidemic of Kloten, have left many doubts in some minds.

On the whole, if it is possible to admit the plurality of the means of propagation of the typhous bacillus and the transportation of the germs by water, air, the clothing of patients and the hands of their nurses, it must be added, as Prof. Brouardel has remarked, that from the standpoint of the tribute that the populace pays to this disease, water is "the great distributor that carries it 90 times in 100."

D.—PREDISPOSING CAUSES.

It remains to determine the conditions that favor, in ourselves, the action of the transported microbe.

We remark in the first place that a single condition affords immunity, that is a previous attack of the disease. But there are cases in which a second attack has occurred, more rare certainly than in measles and smallpox, but duly attested and authentic.

No race enjoys immunity; typhoid fever is spread abroad into all the regions of the globe, in Asia, in Africa, in America, in Australia, as well as in Europe. It exists in an endemo-epidemic state in almost all the great cities.

No anterior disease affords protection against typhoid fever. Smallpox, tuberculosis, malaria, possess none of the preventive action that has been attributed to them.

Cosmic Influences.—It is especially during the estivo-autumnal period that typhoid fever prevails. The statistics of Besnier have established the correctness of this law. Sudden meteriological perturbations have generally little influence upon the etiology of the disease. Yet, we have seen epidemics swept away by abundant rains or by a sudden and considerable fall in the temperature.

Age.—Age is an important factor. Typhoid fever is, in fact, particularly a disease of youth and of adult life. The maximum is observed between fifteen and thirty years of age, above all from twenty to twenty-five. It is much more rare after forty years.

Young children and old people are seldom attacked. Perhaps, with regard to the latter, it is a question of immunity from acclimation, the organism becoming refractory from a prolonged sojourn in a typhogenic medium. The following observations of Parkes would tend to prove this. A village had not had, from time immemorial, a case of typhoid fever; the disease broke out one day and all the inhabitants of the village, young and old, were successively attacked.

Sex.—A majority of the statistics indicate a greater frequency of typhoid fever in men than in women. The proportion of frequency seems to be the same in infancy as in adult life. The disease seems to be more fatal to women (Hayem, Cadet de Gassecourt).

Thorough Acclimation.—"It would seem," said Bouilland, as far back as 1826, "that typhoid fever is the appanage of unacclimated persons." At Paris and in the large cities, the greater portion of typhoid patients is represented by strangers and in general, by those who have recently arrived. In the epidemics of the barracks, the young soldiers are constantly attacked in larger numbers than the veterans.

Crowding.—Crowding, the inuence of which was denied by Murchison, seems very much to favor the action of contagion. M. Thoinot says that he has often seen typhoid fever attain its maximum in the densest quarters of a city stricken with an epidemic.

Overwork, Psychical Causes.—Fatigue, loss of sleep, poverty, immoderate exercise, play a very important part, whatever Murchison may say about it, in the development of sporadic cases and in epidemics. All these causes act by lowering the resistance of the organism.

One ought to interpret in the same sense the influence, less evident, however, of nostalgia, of disappointments, of violent and depressing moral impressions.

Professions.—Hospital statistics supply but imperfect information upon this subject.

The military statute deserves special mention; the predominance of typhoid fever in the army results from complex conditions: Non-acclimation, moral and physical depression, crowding, etc.

The preceding etiological notions suggest some prophylactic indications which it suffices to indicate here.

Disinfection of the stools ought to be practised, since the morbid germs, the products of the typhous dejections, might be inhaled with the dry dust.

But the capital role of the water used for drinking in the transmission of the disease deserves the whole attention of hygienists.

The preventive means of a private order are of a relatively easy application; in time of an epidemic the use of natural mineral water, of boiled water, or of suitably filtered water will afford a suitable security.

The most important measures are those which pertain to general hygiene. The interest of the public health demands then, among other perfected arrangements, that in cities where typhoid fever prevails habitually, the river water shall be replaced by spring water taken from near its head and kept in as pure a condition as possible up to the time of its arrival.

The interest that the progress in etiological knowledge in reference to typhoid fever presents, is estimated by the fact that the prophylactic measures suggested by these acquisitions of science have reduced to one-third the rate of mortality from typhoid fever.

THE GENERAL THERAPEUTIC EFFECT OF THE ALTERNATIVE ELECTRIC CURRENT OF HIGH FREQUENCY AND OF HIGH TENSION.

By DR G. APOSTOLI (of Paris).

British Medical Association Meeting in London (1895).

Dr. Apostoli, together with Dr. Berlioz, on the 18th of March, 1895, presented a paper on the above mentioned subject to the Academy of Sciences of Paris. He now, after longer and riper experience, desires to present a summary statement of his general conclusions:

1. According to Professor d'Arsonval's discoveries, alternative currents of high frequency and of high tension, exert a powerful action upon all living bodies submitted to their inductive influence.

2. The best method of applying these induced currents is to place the patient, free from all contact with electrodes, in the circuit of a large solenoid traversed by these currents.

The patient being thus completely insulated the currents, which circulate in his body by auto-conduction, have their origin in his tissues. The body plays the role of a closed induced circuit.

3. By this method the physiological discoveries of Professor d'Arsonval are confirmed and we are able to prove the powerful influence of these currents upon the vasomotor system—although they produce absolutely no sensation and although they have no apparent effect upon the motor or sensory nerves.

These currents have nevertheless a powerful action upon all the nutritive functions; as has been verified by Dr. d'Arsonval's numerous analyses of the gaseous products of respiration and by Dr. Berlioz's not less numerous analyses of the urinary excreta.

4. The general therapeutic applications to be deduced from this physiological action are confirmed by clinical observation.

Dr. Apostoli has now treated more than a hundred patients by this method at his clinic and at his private consultation rooms. The greater number of these patients have been greatly benefited by this new treatment which, be it remarked, has been used to the exclusion of all other forms of medication, dietetic or otherwise.

5. These currents exert in the majority of cases a most powerful and generally beneficial action upon diseases due to slackening of the nutrition by accelerating organic exchanges and combustion. This is proved by analyses of the urine made by Dr. Berlioz, of which the following is a brief resume:

The quantity becomes more normal; the products of organic waste are better eliminated.

The increased combustion is shown by the diminution of uric acid, while the percentage of urea is generally increased. The relative proportion of these two substances changes under treatment so as to reach in general the figure of 1/40.

The elimination of the mineral products is also changed, but in a manner less marked.

6. When daily seances are given, each lasting 15 minutes, we may generally observe in patients submitted to the influence of these currents the following modifications in their general condition. We mention them in the order of their occurrence:

Return of sleep.

Increase of strength and vital energy.

Increase of gaiety, of power for work and ability to walk.

Improvement of appetite, etc.

In short, general progressive improvement.

This general improvement often manifests itself after the first seances before any local influence is apparent and before any change has occurred in the urinary secretions.

7. Local pain and trophic changes are often more slowly affected by these currents and at times they are entirely refractory for a longer or shorter period.

In such cases the same currents must be applied locally by contact with the electrodes.

This subject will be treated later on in a separate communication.

8. The diseases which have appeared incurable by this treatment are those not associated with well defined organic changes such as hysteria and certain forms of neurasthenia.

Dr. Apostoli has also observed that certain localized neuralgias are refractory to this form of currents, they require its more direct local application.

9° The diseases which have derived most benefit from this therapeutic agent, belong to the arthritic class: Rheumatism and gout.

10. In certain diabetic subjects the sugar has disappeared altogether from the urine under the influence of these currents, while in others there has been no such change notwithstanding the manifest and constant improvement in the general condition.

Is this difference due to the imperfection of the electric apparatus or to the manner of its application? It is hoped that further experience will soon afford an answer to this question; although the fact that diabetes has many different causes, may in itself explain the difference in the results obtained by this treatment.

11. In conclusion, the currents of high frequency and of high

tension introduced into electro-therapeutics by Dr. d'Arsonval greatly increase the field of action of medical electricity.

They furnish general medicine with a new and valuable means of treatment, capable of modifying more or less profoundly the processes of nutrition.

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Comparative illegitimacy.—M. Paul Bourget, in a book which he has written on America, twits the Americans with a desire to look up their grandfathers when they have any leisure.

Mark Twain is very angry, and replies that the French, when they have any leisure, spend it in hunting up their fathers.

Bourget, in reply, tries to prove that the ratio of illegitimacy is greater in America than in France.

The "New York Medical Record" takes up the cudgels and makes the statements, supported by figures, that in France the illegitimates are much more numerous than in America, and are steadily increasing, while marriages are decreasing. The article continues:—

"The most striking phenomenon after all, however, about the Parisian is, not that he can't find his father (twenty-eight per cent. having none), but that he succeeds in getting born at all, for in this wonderful city, out of every 100 families, 32.3 have no children (unless they are still births). Out of 60,000 babies born in Paris yearly, 20,000 are sent out into the country to nurse, and of these thirty-eight per cent. die in the first year. So that if a Parisian is lucky enough to get fathered, and then to find the father, he isn't out of his troubles, for he has hardly an even chance of growing up."—Clinical Sketches.

SELECTIONS.

CYSTITIS—ETIOLOGY AND DIAGNOSIS.

By WM. T. BELFIELD, M.D.,

Chicago.

Etiology. In any discussion of vesical inflammation, a sharp distinction must be drawn between anatomical and clinical cystitis, since the clinical diagnosis is sometimes not warranted by the lesions present.

Anatomical cystitis is a definite pathological entity; it is the effect produced by the multiplication of various bacteria on or in the tissues of the bladder. To this result two factors are essential: first, access of pathogenic microbes to the bladder tissues, and second, such impairment of the vitality of these tissues as materially reduces their normal power of resistance to bacterial invasion.

The bacteria found in clinical cystitis are the tubercle bacillus, the gonococcus, and a dozen or more varieties of pyogenic or septic microbes. That these easily gain access to the bladder through natural channels is shown by the familiar fact that although the urine taken from the normal bladder is sterile, yet in every case of cystitis, even before the introduction of instruments, bacteria are present in large numbers. Such access of microbes is possible in at least three ways other than through the agency of unclean instruments: first, through the circulation, directly or indirectly through the kidneys; second, from the rectum; third, from the urethra.

That pathogenic microbes gain access to the blood of apparently healthy persons is shown by many familiar clinical observations such as their presence in the bone in acute osteomyelitis; that they can reach the bladder through slight abrasions in the rectum, is suggested by the fact that in nearly all cases of cystitis the colon bacillus is present in large numbers, often alone; and it has been shown experimentally that if a culture of this bacillus be injected into the rectum of a dog after slightly abrading the surface of the gut, cystitis usually ensues, the urine containing numbers of this bacillus. That pyogenic bacteria may reach the bladder by propagation along the deep urethra is rendered probable by the normal presence of several varieties in the anterior portion of this channel, as well as by the usual progress of the gonorrheal infection to the bladder neck.

It is therefore apparent that pathogenic bacteria have particularly easy and constant access to the bladder of healthy individuals through natural channels; that cystitis results only occasionally is evidently due, not to the exclusion of microbes, but to the protecting vitality of the normal tissues. Were confirmation of this inference needed, it were found in the oft-repeated observation that pure cultures of various pathogenic bacteria, injected into the healthy bladder of animals, produce no disturbance, as well as in the common clinical observation that unclean sounds and catheters are harmless except when certain morbid conditions of the bladder pre-exist.

From the premises thus briefly outlined, it follows that the etiology of cystitis practically resolves itself into antecedent morbid conditions whereby the nutrition of the bladder is so impaired as to permit the growth of bacteria therein. In other words, cystitis is a symptom—a secondary, not a primary lesion. There are, so far as I am aware, only two exceptions to this statement; that is there are only two infections to which the bladder is clinically exposed, which successfully attack the normal tissues; one is the mixed infection which causes gonorrhea, the other tuberculosis; and the latter, however common in genital organs and kidneys, is very rare as a primary disease of the bladder.

Excluding therefore the gonorrheal and tubercular infections, we may affirm that the existence of cystitis implies an antecedent morbid condition; that it is to be classed, like dropsy and jaundice, as a result and symptom of pre-existing disease. These antecedent conditions may be summarized as (a) local and (b) general; the local causes of cystitis are congestion and trauma, and in most cases of anatomical cystitis one or the other of these is easily demonstrable. Retention of urine, partial or complete, such as results from a tight stricture of the deep urethra or prostatic enlargement, is a familiar condition which, by causing venous congestion, so impairs nutrition as to permit infection of the vesical tissues by pyogenic bacteria. It is an interesting observation that while a pure culture of the colon bacillus or staphylococcus may be injected into a dog's bladder without effect, yet if such injection be immediately followed by ligation of the animal's urethra and retention of urine for a few hours, cystitis at once ensues. The local effect of a calculus or other foreign body, of ulcerating vesical tumors, of violent instrumentation, of myelitis, of paravesicular inflammation, in paving the way for cystitis, is equally apparent.

Among the general conditions provocative of cystitis by depressing vitality of tissues are the acute infectious diseases and the gouty condition. Whether or not "catching cold"—that time-honored cloak for imperfect knowledge—is ever responsible for cystitis, is a debatable question. Severe chilling can certainly aggravate a slumbering cystitis; it would seem plausible that it may so depress the vitality of the normal vesical tissues as to permit the growth of septic bacteria therein, just as it may provoke a pneumonia or osteomyelitis. Yet as a factor in the original production of cystitis, "taking cold" must be recognized—if at all—only after more tangible possibilities have been sought for and excluded.

Diagnosis. The clinical diagnosis of cystitis is often erroneous, because it is sometimes forgotten that the classical symptoms of the disease—frequent and painful urination, pus in the urine, and pain in the vicinity of the bladder—are not peculiar to bladder inflammation, but may be present when no cystitis exists. Yet a patient exhibiting these symptoms is usually labeled cystitis and treated with demulcents or antiseptics internally and bladder washings locally. He goes from one physician to another, from one mineral spring to another, from one patent medicine to another, without permanent benefit.

The fact is that many of these cases have either no cystitis at all or one that is merely symptomatic. For frequent and painful urination arise from irritation not of the bladder proper, but of the bladder neck, that is, the prostate. The extension of gonorrhea to the deep urethra for example, causes these symptoms in acute form, even when the infection does not invade the bladder cavity. It is true that inflammation of the bladder commonly extends to the prostatic urethra; but so does an inflammation of the seminal tubes, of which as well as of the bladder, the prostatic urethra is a continuation. The explanation of many an irritable bladder is found not in the bladder but in the vas deferens or seminal vesical. Thus a well-known member of this society who recently sought my advice concerning a severe and recurrent bladder irritation, was completely relieved by the emptying of a distended vas deferens.

Inflammation of the renal pelvis, too, or of the ureter, may cause the classical symptoms of cystitis. Some years ago I saw in consultation a man suffering from extremely frequent and painful urination with much pus in the urine. While there was evidently tuberculosis of the genito-urinary tract, it was deemed advisable to open the tuberculous and distended left kidney; the frequency and pain in urination ceased immediately and permanently after this nephrotomy, though no therapy whatever was addressed to the bladder.

When therefore a male patient presents the classical symptoms of cystitis, the diagnosis is not completed but only just begun; it remains to locate and to identify the cause of the symptoms. This may be found in any of the following morbid conditions:

1. An infection, gonorrheal, tuberculous or septic, of the prostate, seminal tubes, bladder or perivesical tissues.

2. A retention of urine, due to tight stricture, prostatic enlargement, or impairment of nervous supply from disease of the spinal cord.

3. Trauma of the bladder, from calculus or other foreign body, from rough instruments, etc.

4. Tumors of the bladder or prostate.

5. Infections of the kidney, pelvis and ureter.

6. General impairment of nutrition by infectious diseases, gout, etc.

It is the intent and scope of this paper, not to discuss the differential diagnosis, but to emphasize the fact that any of these may be the primary morbid condition behind the symptoms of cystitis. When I was a County Hospital interne under the rapidly passing generation of surgeons, like Gunn and Bogue, the patient presenting symptoms of cystitis was examined for stone, stricture, and if elderly, for prostatic enlargement. All cases in which none of these was detected, were labeled cystitis and had their bladders washed out. Our present knowledge of vesical tumors, genito-urinary tuberculosis, the chronic inflammations of the genital tract, the surgical diseases of the renal pelvis and ureter, and the relations of all these to cystitis, has been gained in the last fifteen years.

Attention should be directed especially to two conditions which are often responsible for the symptoms of cystitis in the male, namely genito-urinary tuberculosis and the chronic inflammations of the prostate and appendages. Each is quite common as a primary affection, the former between the ages of fifteen and thirty; the latter later in life. Tuberculosis of the genital tract is easily recognized by the nodular hardening of the epidymis and corresponding side of the prostate; its advance through the prostate occasions the most painful symptomatic cystitis. It may occur at a primary infection in young men of robust health and without hereditary taint.

The chronic suppurative inflammations of prostate, utricle and seminal tubes, which may or may not date from a gonorrhea, are less easily identified; yet the swollen and sensitive tissues between bladder and rectum are as distinctly recognizable by the practised finger as is the same condition in the homologous tissues of the female, the broad ligaments and contained tubes. To summarize:

1. Cystitis is a secondary morbid condition, a symptom of antecedent local or general disease.

2. This prior lesion may be found anywhere in the urinary or genital tract, from meatus to kidney or testicle.

3. Accurate diagnosis of the antecedent lesion is the essential preliminary to rational treatment of cystitis.

THE THERAPEUTIC ACTION OF CHLOROFORM IN PARTURITION.

BEDFORD BROWN, M.D.,
Alexandria, Va.

The results of chloroform anæsthesia in parturition constitutes one of the most remarkable and interesting features in the history of medicine. During the past thirty-five years there have doubtless been millions of cases of parturition in which the agency of chloroform as an anæsthetic has been called into requisition in the civilized world, with the rarest report of fatal consequences.

Then, too, when we take into consideration the manner in which chloroform is given in labor, often recklessly, carelessly, and copiously, we are still further astonished at the almost universally favorable results. Often administered by ignorant nurses, husbands, bystanders, even the patients themselves, and not infrequently, recklessly and injudiciously by the attending physicians, it is wonderful that evil results are so rare. Thus, chloroform is used in a manner in parturition that no surgeon would dare do in performing an operation.

The profession has come to regard the use of chloroform in parturition as almost utterly devoid of danger, and it is this opinion, based upon substantial facts, that has given rise to its universal and careless, even reckless, administration in labor. Why chloroform acts differently in the parturient and pregnant female from the non-pregnant person, or why it is comparatively harmless in the pregnant and is attended with a certain degree of danger in the non-pregnant is a question not devoid of interest or importance. To be enabled to determine what there is in the physiology of pregnancy that protects the woman against the dangers of chloroform would be to ascertain and establish a fact in the therapeusis of chloroform that would shed an infinite amount of light on its therapeutic action, not only in labor, but in a surgical point of view.

During the process of pregnancy there are two systems which undergo manifest changes of a developmental nature. These are the vaso-motor and circulatory systems.

The developmental changes in these two systems are of a phenomenal character. The muscular structure of the left ventricle takes on increased nutrition and growth, that it may have increased force and power to meet the new emergencies of circulation and nutrition. A new being is to be nourished, developed, formed, and shaped in all its parts, and to do this a new force is to be created. The heart of the pregnant female not only acquires additional force, but the great vaso-motor and sympathetic systems, with their ganglia and nerves take on new energy, more vigorous action and power to maintain that complex circulation of both the mother, the placenta and fœtus. Just in proportion as the growth of the placenta and fœtus increase these developmental changes in the circulatory and vaso-motor systems advance, and to these developmental changes another is added, viz., leucocytosis. Otherwise the pregnant woman would utterly fail to sustain her own strength and health, and at the same time nourish the placenta and fœtus. Hence her vaso-motor system and circulation reach a state of development in point of vigor, energy and power, rarely attained in any human constitution.

Under these circumstances arterial tension and blood pressure more than redoubled are indicated in the strong, vigorous, bounding and frequent pulse of the pregnant woman, which is familiar to all practical obstetricians. Such a state of arterial tension and blood pressure would be regarded in the non-pregnant as indicating a dangerous degree of plethora and congestive tendency. But in the pregnant woman we know there is a safety valve, a diverticulum for this increased circulatory force and volume found in the placental and fœtal circulations.

The process of pregnancy, the evolution and growth of the fœtus, require that every energy of the maternal system shall be bent singly to the accomplishment of those objects.

That the therapeutic action of chloroform in the parturient female differs widely from that in the non-pregnant person, there is abundant evidence to prove. We know that in surgical practice chloroform anæsthesia is attended with a certain proportion of mortality that renders extreme caution necessary, while a death or even unpleasant result in labor is a very rare occurrence from that cause.

In the obstetrical practice of the civilized world the most careful researches have only brought to light a very small number of cases of death in the millions of instances where chloroform was resorted to.

We may safely say that in the practice of the world there are twenty cases of parturition in which chloroform is employed to one of surgery and yet there is not the one hundredth part of cases of mortality in the former as the latter. I do not think that this is an exaggerated statement. The most careful investigation has failed to find more than forty deaths from chloroform in labor in the practice of the world from the time that this anæsthetic was brought into use to the present time. Some high authorities place the number at only three deaths. This is, I think, a wonderful exhibition, particularly when we take into consideration the careless, unscientific, reckless manner in which it is given during labor.

And not only this, but its often prolonged use during protracted labors. I have seen it given in protracted labors every half hour for twelve and in certain cases for twenty-four hours, where there were not only no evil results, but labor terminated naturally and favorably. I have seen in cases of obstetrical operations the patient kept in a profound state of chloroform anæsthesia for two or three hours without the least indication of collapse of the circulation or suspension of respiration.

In a long experience in the use of chloroform, extending over a period of nearly forty years, I have yet to see my first case of the least evil result to mother or child from chloroform. Yet I am opposed to the reckless and careless use of chloroform in parturition, and for fear that there might be an evil result, believe that the same scientific principles and careful method of giving it should guide us as in general surgery.

According to these statements, and I am convinced that they are sustained by the experience of the majority of the profession, pregnancy, particularly during the stage of parturition, does in a large degree render the woman immune from the evil effects of chloroform. This having been established as a fact in the therapeusis of chloroform, it remains to be determined what is there in the state of pregnancy or parturition that gives the parturient patient this immunity.

In the early pages of this paper the extraordinary development of the vaso-motor and circulatory systems in the pregnant woman was alluded to, with its wonderful arterial tension and high blood pressure. The pulse, even of the most delicate pregnant woman, is often as hard, full and strong as that of the most robust men. In a paper read last November before the Southern Surgical and Gynæcological Association on the action of chloroform on the exposed human brain, I showed very conclusively that the anæsthetic action of chloroform on that organ was invariably to produce anæmia of its circulation, reduction of arterial tension, and diminution of blood pressure, so that always under full anæsthesia the brain becomes anæmic to a degree that in extreme cases there is enormous and dangerous reduction of circulation preceding general collapse. I am therefore constrained to believe that in this wonderful development of force, strength and power of the pregnant woman in her vaso-motor system, lies her immunity from the toxic action of chloroform. Every degree acquired of additional strength in the vaso-motor system gives her increased immunity. It is this newly acquired force of the vaso-motor system of the pregnant woman which enables her to resist the toxic action of chloroform to an extraordinary extent, which prevents depression of arterial tension, and consequently excessive and dangerous anæmia of the brain and spinal cord.

In the cases alluded to of extensive injury of the cranium and the brain, in which, while chloroform was being used, I had a perfect ocular demonstration of its action on the functions of the brain during its administration of three or four times in each case, reduction of arterial tension, blood pressure and vaso-motor force in the arteries invariably preceded a state of anæmia of the brain, and this extreme anæmia of the brain, suspension of pulsation and hemorrhage, always preceded tendency to general collapse.

These facts, I think, indicate to us very clearly that in chloroform anæsthesia, anæmia of the brain to an extreme degree always precedes dangerous chloroform narcosis and collapse, and at the same time that so long as the vaso-motor force remains intact in sufficient force to sustain the circulation in the brain and medulla, life will be sustained.

In my experiments with chloroform in cases cited of injury of the brain, there were two occasions in one and one occasion in the other on which there was alarming collapse, with almost entire suspension of respiration and cardiac action. Preceding these symptoms, in every instance there was marked reduction of vaso-motor force, arterial tension and blood pressure, and diminution of cardiac power. In all my experience in the use of chloroform in parturition, no matter to what extent the agent was pushed, I have never witnessed this extreme reduction of cardiac and vaso-motor force that I have in general surgery.

The primary action of chloroform is on the cortex of the brain, the seat of consciousness and sensation. For the relief of the pains of parturition all we have to do is to bring the cortex under a state of anæsthesia, without extending its influence so far as to involve the reflex functions of the cord. This is equally true of anæsthesia, of general surgery. By watching the action of the remedy we are enabled to confine its influence to the cortex without infringing on the functions of the cord or vaso-motor system. This is all that is desired to relieve pain and to render the act of labor more comfortable and easy for our patient. On the contrary, if we desire to relax excessive rigidity of the soft parts, or in case of convulsive action, to control that, we must extend our anæsthetic influence further and bring under its power the reflex functions of the cord itself. So long as we confine our anæsthetic to the cortex alone we cannot accomplish these objects. But immediately the cord is brought under its influence complete muscular relaxation follows.

We will now consider the question of anæsthesia in its practical bearing and influence on the process of parturition.

Is the use of chloroform in parturition justifiable for the relief of pain alone?

This is the first question that presents itself for our consideration. I believe that it is but not in every case. For instance, there are cases where the pains are slight, the conditions all favorable, the passages spacious, the labor rapid, in which it is unnecessary. But in every case where labor is at all slow, painful, and not easy, I believe that it is not only justifiable but that it would be inhuman to withhold it. This statement is based upon the fact that the mortality from chloroform anæsthesia in labor is so very small, not probably amounting to one in millions, we certainly can risk so little for so much good.

I know that there are those who oppose its use in parturition in toto, but I believe without good and just reason.

Pain is the great terror of parturition, and, if it could be robbed of this feature alone, it would be converted into a very simple and easy process. For some years before I adopted anæsthesia in my obstetrical practice, I have time and time again sat by the bedside of women in the throes of parturition and listened, often with anguish to myself, to their cries for relief from pain, heard their moanings from almost insufferable agony, for hours of such scenes that impressed themselves upon my memory in a manner never to be forgotten. With chloroform at hand and with my familiarity with its action, I never have to pass through such painful scenes now. I have tried in past years many substitutes for chloroform to relieve the pain of parturition, but have never found one yet. I am convinced that it is the anæsthetic of all others peculiarly appropriate to the parturient state. It is clean in its action; does not cause congestion of either the brain, the lungs or kidneys, but markedly diminishes the tendency to congestion of the brain.

Does the action of choloform facilitate the process of parturition?

I believe that as a rule it does. I am convinced that in a great majority of cases it does shorten the duration of parturition. I know that it is the opinion of some that its action is to reduce the strength of uterine contraction and in this way retard the process of parturition. It has been my experience that while it relieves pain, its use may be so graduated as not to impair uterine contraction. Acting on the cortex of the brain alone and on the reflex functions of the cord are two different things.

Thus we can abolish sensation without affecting reflex action. I believe that with care and judgment we can confine the action of chloroform to the cortex alone, the seat of sensation, and leave intact the reflex functions and the contractive force of the uterus.

I have no statistics to guide me in this matter, but my personal experience in the administration of chloroform in parturition leads me to believe that it not only makes labor easier, but that in the average it shortens the duration of that process. If then, chloroform is capable of rendering labor easier, more bearable to the patient, and can shorten its duration one hour, even thirty minutes, its application is justifiable when we consider the very small risk incurred in giving it.

In certain conditions I know that it can shorten the duration of labor. One of these conditions is rigidity of the soft parts, and another is irregular contraction of the uterine muscular fibres, or spasmodic contraction of certain sets of fibres and relaxation of other sets, a condition that may protract labor indefinitely. The spasmodic contraction of certain muscular fibres of the uterus and relaxation of others is not an unfrequent state during protracted labor, and is a similar condition to that which produces the hour glass contraction after labor. Chloroform is capable of equalizing uterine contraction and of preventing irregular spasmodic contraction, and in this way facilitating parturition.

Its well known power to overcome and relax muscular rigidity no one can doubt. In illustration of this fact, I have repeatedly in my experience seen cases attended with rigidity of the soft parts where the process of labor was stationary—it might be for an hour or more or even hours—when chloroform was given in such quantities as to produce muscular relaxation, the labor would progress rapidly towards a termination.

At what stages of parturition is chloroform applicable ?

To relieve excessive pain it is applicable at any stage. But to induce relaxation of muscular rigidity it is applicable in unusual rigidity of the os uteri, and in extreme rigidity of the perineum when the fœtal head begins to press on that body. When the object of giving chloroform is to relieve pain only, it should be given in small quantities at the beginning of each pain and left off when the pain ceases. But when we desire to overcome muscular rigidity the patient must be subjected fully to its influence. In the case of extreme contraction of the os uteri, or great rigidity of the tissues of the pelvic floor, no half-way procedure will accomplish anything. The patient then must be brought sufficiently under its influence to at least partially suspend reflex action when complete muscular relaxation follows, just as we would do in reducing a dislocation.

When there is perfect accommodation between uterine force and muscular relaxation in a normal pelvis, labor proceeds rapidly, easily and successfully. On the contrary, when this accommodation is disturbed, when for instance uterine contractile force is feeble, and perineal muscular tension is excessive, labor proceeds slowly and painfully. The action of chloroform in this class of cases is to bring this accommodation between uterine force and pelvic resistance to a more normal standard by reducing muscular tension.. Leaving out of question congenital defects or those caused by disease in the pelvic bones, the vast majority of tedious and difficult labors will be found to be due to rigidity of the muscular structures of the pelvis, or inefficiency of uterine contraction. We often see these conditions existing together. Nineteen out of twenty cases of instrumental delivery in my personal experience have been due to excessive muscular rigidity of perineum. In these particular cases in my experience the action of chloroform has been to cause perineal relaxation, to reduce muscular resistance, to bring about accommodation between force and resistance without materially impairing that force on the part of the uterus.

Does chloroform tend to suspend uterine contraction ?

There can be no doubt that chloroform may be given in labor in a manner either to relieve pain and to leave uterine contractile force intact, or to both suppress pain and uterine rhythmic contraction, so as to, for a time, suspend parturition.

Rhythmic uterine contraction is an essential reflex function, and we know that the different nervous functions come under the influence of chloroform in consecutive order,—sensation first, then reflex action, and finally vaso-motor action. Because of this fact we can, as a rule, relieve the pains of labor without impairing the force of uterine contraction. All practical obstetricians have observed patients in labor when under chloroform, where there was entire relief from pain, while at the same time the rhythmic contraction of the uterus, and all symptoms of active tenesmus were in full operation. I believe that this is the ideal state of chloroform anæsthesia in labor, and I am convinced that chloroform may be so administered always as to relieve pain and leave the reflex functions unimpaired. Again, I believe that the reflex functions of the parturient patient are far more resistant to the toxic action of chloroform than in ordinary cases, and that it is more difficult to suspend them. This fact gives us a decided advantage in giving chloroform in labor, simply to relieve pain without interrupting the progress of parturition.

My experience has been that when the uterine contractions have been for the time suspended by the too free use of chloroform, when this influence subsided, uterine contractile force returned with renewed and additional vigor to perform the work to be accomplished.

Does the action of chloroform tend to promote or prevent post partum hemorrhage?

This constitutes one of the most important questions connected with the therapeutic action of chloroform in parturition. If it tends to promote hemorrhage then this fact increases the dangers of its use in this condition. From my personal experience, I can say this much relative to this question,—many times after its administration in parturition, when pushed to the extent of causing entire unconsciousness at the time of birth,—that in not a single case have I observed a greater tendency to hemorrhage, or any greater difficulty in producing firm uterine contraction, than when it was not used.

So far as this question is concerned I can speak alone from personal experience, and any personal experience in a large number of cases, extending over a long term of years, is of some value in settling important questions. High authority on the action of chloroform on the circulation is, that it is a vaso-motor contractor. In my surgical practice the action of chloroform on the vessels rather tended to establish this view. Profound chloroform anæsthesia certainly does diminish surgical hemorrhage. In my cases of injury of the skull and brain, under chloroform anæsthesia there was a marked diminution of cerebral hemorrhage in every instance. Then, if it be true that chloroform is a vaso-motor contractor, this, it appears to me, would decide this important question.

Does the action of chloroform in parturition tend to prevent or promote laceration of the os uteri or perineum?

Are lacerations more common under the present method of delivery under anæsthesia or under the old system of delivery without anæsthesia. I have no reliable statistical data bearing on this subject to guide me, but I will state here that I have practiced under both the old system and the new, and am enabled to state, positively, that all of the bad cases of laceration of os uteri and perineum have occurred in cases where no chloroform was given. Many of the worst cases of laceration of these organs occurred in cases of rapid birth before my arrival. I am decidedly of the opinion that thorough relaxation of the structures of the pelvic floor constitutes the best security against injuries of this kind, and I know of no agent that is capable of producing that extreme relaxation of muscular tissue like chloroform, and therefore placing the patient in a condition most favorable for the prevention of lacerations. I will briefly cite the case of Mrs. T., a young married woman who had an accidental abortion at five months of pregnancy. I was called to her about eight hours after, and found her with a retained placenta. The perineum was intensely rigid, and the ostium vaginæ closely contracted. The vaginæ was narrow, and os uteri was rigidly contracted on a protruding umbilical cord. I determined to place the patient thoroughly under the influence of chloroform, with the hope that it would produce sufficient relaxation of the soft parts to enable me to insert the fingers into the uterus and remove the retained placenta. While the patient was under the profound influence of chloroform, to my surprise I found complete relaxation of the perineum, vagina and os uteri. These tissues were in such an extremely flaccid condition that I was enabled with perfect ease to pass my hand not only into the vagina. but into the uterus, which was equally as flaccid, grasp the placenta, detach it from its adhesions and remove it safely at five months of pregnancy. Without the influence of chloroform, this operation could not have been performed. During my past professional life I have had occasion to test all the various methods proposed by different authorities for the prevention of laceration of the perineum. I have found them more or less defective, some entirely untrustworthy. For some years past the methods which I have adopted with the most satisfaction was to retract the perineum with the fingers hooked into the vagina back towards the rectum forcibly at each pain, so as to maintain a continuous relaxing influence of the perineum until the fœtal head presses on that body. When it reaches that stage then the perineum will have been very generally relaxed. At this point the patient is kept under the influence of the anæsthetic until the head begins to protrude from the vulva when it is suspended. In my hands this mechanical dilatation of the perineum, combined with the relaxing influence of the anæsthetic, has been the means of preventing more lacerations than any other method that I have tried up to this time.

In conclusion, I can truly say that after a long and favorable experience in the use of chloroform in parturition, that I have found it not only a blessing to the patient but to the physician also. Without the means of relieving human suffering what a dreary, unsatisfactory and repulsive life that of a physician would be. Yet for ages and ages the lot of the woman in the throes of parturition was to suffer, to bear, and to submit to its terrible tortures, hopeless of relief until the end came.

For the past half century the achievements of medical science in the discovery and perfection of remedies to relieve human suffering, to improve human health, and prolong human life, have astounded the civilized world, and are something for our profession to be proud of; and one of the greatest of all these achievements is the discovery of chloroform.—Annals of Gyn. and Paed.

ABSTRACTS.

Points to be Remembered in Rectal Surgery.

1. Remember, To operate upon all cases of fistula where there is sufficient vitality or nutrition to heal the wound, always dividing the fibrous membrane at the bottom of tract and packing wound to the bottom, for the purpose of healing by granulation.

2. Remember, To always open abscess early to prevent fistula in ano.

3. Remember, If you operate on fistula, in a tubercular patient, give him the benefit of a doubt.

4. Remember, That you should never fail to examine your patient thoroughly, for small arms leading out from the main track, and examine for an associated stricture which may be the cause of the fistulous tract.

5. Remember, That you are never to cut the sphincter but once in any operation, and be careful to warn your patient of the danger of incontinuence.

6. Remember, That you are to confine your patient in bed, not trusting to the care of a nurse (exclusively). Tuberculous cases should be an exception to the rule—giving them moderate exercise and fresh air.

7. Remember, That physiological rest is the first principle in the cure of all diseases.

8. Remember, That varicosed veins are not hemorrhoids until they have passed through the stage of inflammation and plastic exudation.

9. Remember, That hemorrhoids that don't protrude don't demand an operation, as a rule.

10. Remember, That uncomplicated hemorrhoids have no pain.

11. Remember, That there is a differential diagnosis to be made between hemorrhoids, prolapse of the bowel, and polypus.

12. Remember, That the ligature is simple in application, free of danger, and certain in its results.

13. Remember, That you are to transfix the base of the large pile,

and not the small one, cutting off two-thirds, and tying tightly to prevent hemorrhage.

14. Remember, That there are two forms of external piles; one you can cut off, the other you can ligate.

15. Remember, That you are always to remove all complications at the time of removing the hemorrhoids.

16. Remember, That you are to remove all external tags during the operation for internal hemorrhoids.

17. Remember, The capillary or strawberry pile, for danger may come to the lot of your patient.

18. Remember, The Matthews tampon, which is simple in construction and easy in application.

19. Remember, Hysteria to be a disease when applied in rectal surgery, having for its causes a change in quantity or quality of blood and a change in the solids consequent thereon.

20. Remember, The reflexes in diseases of the rectum, for you will find a pathological cause somewhere along the telegraphic line of the lumbar or sacral plexus.

21. Remember, That an operation on disease in the contiguous organ will relieve the protean symptoms in the rectum.

22. Remember, In connection with the reflexes the small fistulous tract beneath the mucous membrane, the sensitive nerve, the denuded epithelium, and nothing but patience and perseverance by the use of the probe will reveal the organic lesion in question.

23. Remember, The irritable ulcer or fissure, located on the sphincter muscle, caused by a denudation of the epithelium, does not heal for the want of physiological rest.

24. Remember, Divulsion cures it.

25. Remember, Ulcers in the rectum are oftener caused by constipation, and a locked-up liver action, than any other known cause.

26. Remember, That ulcers in the rectum are not caused, as a rule, by dysentery.

27. Remember, That when you give them physiological rest and remove the cause, or pull out the nail, as Prof. Carpenter has so thoroughly impressed upon your mind, they will heal.

28. Remember, The sigmoid flexure as a receptacle, and liable to ulcerations, which you may cure by medicines of a disinfecting and cleaning nature, to be used through a Wales bougie.

29. Remember, The classification of stricture: Acquired, the result of inflammation; congenital, which is not a stricture proper, but an atresia, the result of an arrest of development.

30. Remember, That there are simple tubular or valvular strictures

of a benign nature, that are amenable to treatment by gradual dilatation, to be used indefinitely, or we might say, as long as a patient has an existence.

31. Remember, One-half of all the strictures in the rectum are syphilitic.

32. Remember, That in all malignant strictures of the rectum nothing short of colotomy, inguinal preferred, will spare your patient's life for a short time; and no operation, only when suggested by the patient.

33. Remember, Syphilitic stricture in its incipiency should be treated constitutionally.

34. Remember, Tuberculosed strictures, where the lungs are badly involved, are to be let alone.

35. Remember, That all strictures, no matter where located, are the result of inflammation, with plastic effusion or infiltration.

36. Remember, That prolapsus ani is a disease confined more especially to childhood, and where it occurs in the adult it is the lingering result of childhood misfortune.

37. Remember, That you may mistake prolapsus for hemorrhoids, and only a clear understanding of an anatomy of the parts will lead you to a differential diagnosis.

38. Remember, You are to select Matthews' method for relief in the adult; palliative astringents with strapping for children.

39. Remember, Pruritus ani is the result of nervo-reflex actions and filthy habits.

40. Remember, That it is the most formidable of all diseases, as far as cure and treatment are concerned.

41. Remember, That you should relieve the cause, and by the use of campho-penique and temperance or total abstinence from the use of alcoholic drink and tobacco, you may cure the disease.

42. Remember, The rules that you are to be governed by, quantity and quality of blood, physiological rest, thorough asepsis and antisepsis. —Oatman, in St. Louis Medical Era.

Etiology of Acute Cerebral and Cerebro-spinal Meningitis.

The Canada Lancet in an editorial makes the following statements:

It has been recognized since the beginning of this century that a form of the above disease is epidemic; as also that sporadic cases occur at any time. The classical "spotted fever" form is not met with nearly so frequently now as it was a quarter or half a century ago, when epidemics occurred chiefly in the winter and spring.

Leaving out the predisposing causes, such as age, sex, environment, etc., we wish to call attention to the interesting fact that an acute meningitis may be due to a great many defective agents, and that unless it be in the spotted fever of the older school men, no one specific cause exists.

The number of cases of inflammation of the meninges which do not conform to this classical type with eruption, are so numerous that the immediate factor or factors in their causation become matters of great interest not only to the pathologist, but to the physician in daily practice. And that this is so, is evidenced by the number of investigations which are being carried on in regard to the immediate causation of the disease. The results of such investigations appear to be that so called primary meningitis is extremely rare, if it exists at all; that traumatism is not one of the most frequent causes, and that by far the greater number of cases are directly traceable to some local or general acute infectious process. And it would be interesting to know how many of the cases due to trauma have been really caused by infection of the wound. Have we not all seen cases of fracture of the skull, and injury and disease of the cranial bones and soft parts about the head, run a benign course with no resulting meningitis, and so are not cases of meningitis said to be due to trauma really due to trauma. plus infection of the lesion?

Dr. Biggs Wilder [Quarter-Century Book,] reports the bacteriological examination of eighteen cases. He found in one instance pure cultures of the anthrax bacillus; in one bacillus coli communis; in one B. coli communis and proteus vulgaris; in four the pneumo-bacillus of Frænkel; in two the streptococcus pyogenes; in one the diplococcus intracellularis meningitidis, and in two cases more than one variety of bacilli.

He also draws the following conclusions:

1. "Purulent or sero-purulent meningitis is always microbic in its origin.

2. Many cases of cerebro-spinal meningitis do not differ from cerebral meningitis except in the extent of pia affected. The etiological factor may be the same.

3. Cerebro-spinal meningitis is usually primary.

4. Cerebral meningitis is usually secondary to some infectious disease and is only occasionally primary.

5. When the disease is secondary the cause of the secondary infection may be a different organism from that producing the primary disease.

6. The following organisms have been previously found in the pial exudate in cerebral meningitis: The pneumo bacillus of Frænkel, the streptococcus pyogenes, bacillus typhosus, staphylococcus pyogenes,

pneuma bacillus of Friedlander, the bacillus of 'la grippe' and the gonococcus." The author's observations have added two new ones, bacillus anthracis and bacillus coli communis.

7. The pneumo bacillus of Frænkel is the most frequent cause of cerebral meningitis.

8. The latter organism is a not infrequent cause of primary cerebral and cerebro-spinal meningitis, the lungs not being involved.

9. The cases of meningitis due to different organisms do not show such constant differences from each other in the symptoms presented, as to make possible the clinical differentiation as to cause.

10. The amount of exudation bears no constant relation to the severity of the symptoms.

11. It is not possible to distinguish with certainty during life, cases of acute cerebral hyperæmia, with or without œdma, from cases of meningitis.

Practical Points on the Treatment of Venereal Diseases.

Six months experience in the outdoor treatment of venereal diseases at the Liverpool Seamen's Dispensary has led me to adopt certain lines of practical therapeutics which seem most suitable. These are not claimed to be original, but their success cannot be very much doubted after a fair trial. The great enemy one has to contend with is alcohol in its various forms. It seems impossible for most seamen to keep away from it when ashore. In very few instances are orders obeyed so far as drinking is concerned.

Gonorrhea. Unfortunately this disease is seldom brought to the notice of medical men in time. Often the many quacks who infest the large cities have tried their hands at "a cure" first of all, and that too at great cost to the patient. If the case is seen within the first three or four days, excellent results are obtained by the following treatment: To begin with, active purgation is insisted on during the inflammatory stage. For this purpose aloin pills, gr. j in each, are given. This is an important part of the treatment too often overlooked. Not only does the aloin improve the appetite, but it also prevents chordee and gonorrheal synovitis. The local inflammation is also found to be less severe As regards the urethra itself, one cannot depend on the injection of a strong solution of silver nitrate. Two patients had been so treated at a German port, and they were convinced that their trouble had thereby been very much aggravated. In all early cases the most successful local measure appears to be the application of dilute nitrate of mercury ointment, to which morphine, gr. j to ℥ j, has been added. A lucifer match with a fine layer of cotton wool twisted around it is smeared with the ointment and passed into the urethra three or four times a day. This causes no smarting, and in about eight or ten days the discharge has almost disappeared. At the same time an alkaline mixture containing hyoscyamus is given.

Should the case not be seen till later, say about three weeks, injections of liquor plumbi subacetatis ʒ i to ℥ vj of chloroform-water do very well along with small doses of an emulsion of copaiba balsam given by the mouth. Here also the aloin prevents the dyspepsia and obstructed; in other words, that the children whose naso-pharynx is the pain in the loins, referable perhaps to the kidneys, which copaiba in effective doses is apt to cause.

Gleet. The treatment of this sequela of gonorrhœa is the most disappointing of all whether stricture be present or not. Tr. opii along with copaiba seems to do good; as also does Friar's Balsam, whatever its action may be. But one thing is certain, the drinking of beer tends to perpetuate gleet almost indefinitely.

Epididymitis. Our dark-skinned brethren are very liable to this complication of gonorrhea. Firemen are particularly subject to it, as well as to bubo. The application of six leeches, followed by the liberal use of belladonna liniment, affords immediate relief. The leechbites allow of greater absorption of the belladonna taking place. Suspension is always carried out, but hot fomentations or poultices are seldom practicable with this class of patients.

Bubo. When this has been opened freely the interior is rubbed out with cotton-wool wound on the point of an artery forceps and soaked in carbolic lotion (1 in 10). The part is then dressed with iodoform emulsion containing a little pure ground coffee to disguise the odor.

Syphilis. A noteworthy feature often found in cases of this disease is that they are complicated by malarial fevers. In such cases no drug can equal Donovan's solution. The majority of sailors to foreign parts have no faith in quinine; somehow they rely more upon arsenic in second or subsequent attacks. This observation led to the use of Donovan's solution in syphilitic cases. If there be much anæmia, Blaud's pills do very well along with the mercury, and they counteract the purgative action of that metal when pushed far enough.

Ulcers of the glands. Several of such cases have been treated, all of them contracted on the African coast. They have a quite distinctive appearance from those contracted in England. They appear usually on the dorsum of the glands, starting at the corona. They are first observed three or four days after contact, and gradually spread until about the size of from a sixpence to a shilling. They are more or less circular, flat and pale at their base. In connection with this, it is worthy of note that there is a tendency to drop the word "phagedenic" from surgery; but these ulcers are undoubtedly phagedenic, and perhaps peculiar to African contagion. They heal rapidly when dusted with calamine containing a little calomel. They always leave more or less deformity. That these ulcers are not syphilitic is proved by their early appearance and by the absence of other signs of the disease. They appear to be caused by a special organism which destroys the tissues either by itself or by its products. In one case gonorrhea was present as well. The other cases were quite uncomplicated.—Robert Turner, Liverpool, in the Practitioner.—Pract. and News.

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Wounds of the Liver.

Zeidler (Deut. med. Woch.), observes that the diagnosis of ruptures of the liver is not easy. Such symptoms as local and radiating pains, icterus, enlarged and tender liver arise late, and yet the danger lies within the first twenty-four hours in the majority of cases. External local measures cannot arrest the hæmorrhage. Althought it may not be possible to diagnose the injury to the liver, laparotomy is indicated here as in the wounds of other viscera. If there be an actual wound of the abdominal wall it is easier to decide whether the liver has been wounded. The author then details three cases of wounds of the liver in patients aged 18, 16, and 28 respectively, the first being a rupture without external wound. In the first case there were symptoms of shock and irritation of the peritoneum; in the second severe symptoms of internal hæmorrhage; and in the third no marked symptoms. In the first two cases there was a large quantity of blood free in the peritoneal cavity, whereas in the third there was less. The hæmorrhage from the liver was arrested by the tampon in one case and by Paquelin's cautery in the other two. They all made good recoveries. It is striking that small wounds in the liver can produce so much hæmorrhage. The tendency to spontaneous arrest of the hæmorrhage is slight. Suture of the liver, Paquelin's cautery and the tampon are the methods available. Paquelin's cautery can hardly arrest hæmorrhage from large vessels in deep wounds of the liver; here the suture may be used. The blood pressure in the liver vessels is low, hence arrest of hæmorrhage can surely be obtained by the tampon. The wound in the liver where the tampon is used also remains better under observation.—Brit. Med. Jour.

PROCEEDINGS OF SOCIETIES.

DISCUSSION

OF DR. WHITE'S PAPER ON GOITRE

(The first original article in this journal.)

Dr. Chas. M. Shields remarked that up to 5 or 6 years ago he had been treating goitre with electrolysis by the labile methods, a pole on either side of the tumor. In two cases, a cure was permanent. Three-quarters of the cases in girls occur at puberty and as these cases get well anyway, it is doubtful that the cure was the result of electrolysis. For the last 4 or 5 years, the doctor has been treating goitre by cataphoresis as described by Dr. White. In three cases, the results were good. In the first case, the neck was reduced one and one-half inches to normal. In the second, there was marked improvement, but reduction was not complete. The third had been treated previously and reduced to one and one-half inches. Under Dr. Shields' treatment, reduction was permanent. Another case was that of a young Italian affected by goitre for eight years. She had been treated in Italy by injection and electrolysis. The growth was cystic and looked suppurative. Counter-puncture was done and the tumor was washed out every other day with peroxide of hydrogen. It was larger than a hens egg, but now, there is no perceptible enlargement. Results, as a whole, however, are such as never to make him promise permanent cure.

Dr. Jacob Michaux said that in doing a tracheotomy in a child with diphtheria, he was obliged to go through the isthmus of the thyroid gland; and the amount of hemorrhage ensuing made him fear greatly for the safety of the child.

Dr. W. W. Parker never fails to stop goitre in the formative stage. by a blister applied every ten days.

Dr. J. W. Henson spoke of the operation of opening the deep fascia and stitching it to the integument.

Dr. White, in closing the discussion, stated that he had listened to the remarks with interest; that he had only known the evening before that he was to be called on to open the discussion on goitre; and that he regretted the brevity and necessary incompleteness of his remarks, limited as they were mainly to his own experiences and his recollections of what others had said and written in relation to bronchocele; but that he would try to reply to the gentlemen who had spoken on the subject he had introduced.

In regard to Dr. Michaux's remarks as to the danger from cutting through the isthmus, he had learned from his experience that this was one of the traditions in the profession used to scare timid operators, like the nursery ghost stories to quiet refractory children. He had often in doing tracheotomy in a hurry, to open the trachea without regarding the isthmus; and whilst he had seen considerable bleeding—which usually stopped on inserting the tube—he had never seen a dangerous hemorrhage. Once he was called at midnight to a man who had been apparently suffocated by the pressure of an enormous goitre, and was obliged to open the trachea by candle-light as quickly as possible. Dr. O'Brien, of Alexandria, assisted him on that occasion, and cut directly through the center of a fibrous goitre three inches thick, without regard to hemorrhage, until he reached the trachea, which was opened; and the man was resuscitated by artificial respiration. Even then the hemorrhage, whilst considerable, was not dangerous in amount.

He was glad to know that Dr. Shields' experience with the cataphoretic action of electricity had been favorable, but did not think it necessary to put the remedy on both poles, as the positive pole was the active agent in inducting the remedies into the tissues. The thought also that Dr. Shields' idea of electrolysis was rather different from the common acceptation of that term, inasmuch as he seemed to confound the passage of the constant current, or galvanism, through the growth, with the destructive action of the negative pole introduced directly into the tumor—the term electrolysis referring only to the latter.

Dr. Parker's experience with goitre was more favorable than his own; especially in the lucky circumstances that he always saw them just in their incipiency when counter irritation with blisters was sufficient to cure. All the goitres he had ever seen were well-developed tumors of long standing when the case applied to him. On one occasion, however, he had seen the enlargement of the thyroid cured by a blister. It was a case of non-suppurative thyroiditis, the only one he ever saw, which developed so rapidly in a very short time as to threaten suffocation. He at once, applied an ointment of red iodide of mercury and iodide of potash all over the front of the neck, producing an enormous blister, and in a few hours promptly relieving the patient. Meanwhile, he sat by expecting at any time to be obliged to open the trachea.

Dr. Henson was quite right in saying he had seen report of merely opening the deep fascia in goitre, as it was an operation suggested to relieve dyspnœa from pressure on the glands on the trachea, but Dr. White had never seen a case of cure recorded, from this method, although it was quite within the bounds of probability that after relieving the pressure of the fascia upon the gland, atrophy of the gland might have ensued; and, therefore, it is not at all improbable that he had seen a report of a case cured by this operation, although it was performed merely for the relief of suffocative symptoms and not to cure the goitre.

Mark W. Peyser, M.D.,
Secretary and Reporter.

The Anatomical Lesions of Gastro-enteritis and Cholera Infantum.

Prof. Heubner, recently appointed to the Children's Clinic at Berlin, in a communication on this subject, stated that he had examined the intestines of nursing-infants dying from other diseases than those of the alimentary tract, and had observed a rapid alteration in the intestinal epithelium even after a lapse of a few hours. In cases in which the post-mortem examination had been made from twelve to twenty-four hours after death, the shape of the cells had entirely disappeared and a sort of partly-desquamated membrane had formed. If the intestine had been contracted at the moment of death, the glands were found lying close together, and the vessels were devoid of blood, causing a certain degree of anæmia of the mucous membrane, which occurred after death. If the intestine, on the contrary, had been relaxed, the glands were widely separated and the vessels engorged causing hyperæmia, also cadaveric. These conditions of epithelial desquamation—hyperæmia or anæmia—Professor Heubner regarded as normal, no pathological changes of the intestine being found.

In three cases of subacute gastro-enteritis with dyspepsia, examined after death, he found a degeneration of the mucous membrane of the gastric glands, the cells, however, being normal. The epithelium of the large and small intestines was intact, but in the former was considerably degenerated. In cases of cholera infantum the changes were more extensive. The stomach was filled with lumps of mucus; the epithelium of the large intestine, jejunum, and ileum was in a necrosed condition, causing a loss of the power of absorption and secretion; the villi were united, forming a uniform mass. Professor Heubner did not determine the nature of the micrococci present, although he found no specific bacteria. The lesions did not, in his opinion, account for death, which he was inclined to attribute to an auto-intoxication of intestinal origin, the disease, like other infections, proving fatal before any appreciable anatomical lesions resulted.—Univ. Med. Jour.

THERAPEUTICS.

Barlow's Disease.

Baginsky (Berl. klin. Woch.), thinks that Barlow's disease is becoming more frequent in Berlin than it formerly was. He showed a child 11 months old to the Berlin Medical Society. The child had beaded ribs, but showed no decided marks of rickets in the limbs. In the lower third of each thigh there was swelling, and deep indistinct fluctuation could be made out. The swollen regions were extraordinarily tender, and the child made no spontaneous movements of the limbs. The child's gums were slightly swollen and darker red than natural. Baginsky has noticed that the greater number of cases of this disease occur in families of good means, and most of his cases have occurred in private practice, when "artificial" foods have been used. The children do well on these foods at first, and then cease to progress or decline in their general nutrition, and painful swellings make their appearance. He does not think, however, that the blame can be as yet attached with certainty to these methods of feeding. One child had taken only cow's milk, and the disease followed on a convulsive cough. He calls attention to the superficial similarity between Barlow's disease and Parrot's syphilitic pseudoparalysis. In the latter affection the lesion is an acute gummatous osteochondritis, which has nothing to do with the subperiosteal hemorrhages of the former disease. Syphilis could be excluded with certainty in all Baginsky's cases of Barlow's disease.—Brit. Med. Jour.

Functional Diseases of the Heart.

Powell (British Medical Journal), describes a functional disease as one where the heart itself is normal, but there is a perverted action of the organ. The first condition is an undue perception of the heart's action, whether normal or altered; this he believes to be a central neurosis usually hereditary, which has either mental shock or nervous shock as the exciting cause; the rhythm of the heart is variable, with variable tension. Such cases are best treated by not ignoring the trouble, but persuading the patients to make the best of their unfortunate inheritance, insisting on fresh air, physical and mental exercise, short of fatigue, and avoidance of drugs. Oppressed action of the heart is accompanied by the symptoms of increased arterial tension, headache, tension over the brow, and cardiac distress. The peculiar weariness is referred to the apex; sometimes there is a fluttering feeling. It occurs in males. They rise late, hurry through breakfast, hurry through business, return fatigued, eat dinner and retire. Some of these cases have attacks of cardiac palpitation and distress which approach true angina pectoris.

Many cases of true angina pectoris belong to the functional group. In these vaso-motor excitation causes embarrassment of a heart which is structurally diseased.

In a certain group the heart's action is accelerated; among these are the ordinary cases of palpitation due to sudden emotion or exertion, as in athletes, or in a person in sudden danger. These cases are purely physiological. The rhythm is regular. In another class there is a diseased heart and irregularity of action, brought about frequently by disordered digestion. Direct irritation of the cardiac nerves by endocarditis or pericarditis will often cause irregular action. Overstrain is another cause of such disturbance.

Sustained hurry of the heart or tachycardia he believes to be of truly nervous origin, and the heart changes to be secondary.

Slow pulse, slow irregular pulse, and slow pulse with intermediate heart beats are all occasionally met with.

An abnormally slow pulse is occasionally met with as a sequel of diphtheria, influenza and typhoid. These cases, probably, are due to a neuritis of the cardiac branches, and to an inhibitory action on the cardiac muscle by the over-acid blood.—University Med. Magazine.

Croup.

Catarrhal laryngitis or false croup begins suddenly, either with an attack of dyspnœa and croupy cough, or croupy cough alone. Membranous croup, which is either primary laryngeal diphtheria or pseudo-diphtheria, is most insidious and slow in its onset. False croup is always worse at night and better in the daytime; membranous croup, while it is worse at night, persists in all its unfavorable features through the daytime as well. The loud, ringing cough in false croup does not change its quality, and is more noticeable than the hoarse or smothered voice in membranous croup; the ringing cough is soon lost, becoming smothered, and is far less noticeable than the hoarse, husky voice, which finally becomes almost suppressed. In the interval of the attacks of dyspnœa in false croup, respiration is difficult, or harsh only on inspiration; in membranous croup it is so both on inspiration and expiration. In false croup the attacks of dyspnœa occur only at long intervals; that is, either at night, or, if in the day, towards night; in membranous croup the intervals between the attacks grow steadily shorter, until difficult, or harsh, labored breathing is continuous. No reference is made to laryngoscopical examination, as it is at best most difficult for the general practitioner to accomplish, and is annoying to the patient. Moreover, the diagnosis can be made without it.

Other diseases, such as measles and scarlatina, are likely to be complicated with croup. Whenever such a complication occurs, it may safely be regarded as diphtheria or pseudo-diphtheria of the larynx.

Nothing is intended to be offered as to details of treatment, but it must be at once apparent to all, how important a matter the differential diagnosis of the various laryngeal disorders, attended with croupy cough or voice, in children, is, as bearing upon an honest and correct treatment. While a simple emetic or steam inhalation, with the internal administration of a diaphoretic, will suffice in false croup; or cold sponging several times daily, together with the internal use of cod-liver oil and phosphorus, will do in laryngismus stridulus; any such waste of valuable time would be criminal in the management of true croup. Here we have to treat the effect of the disease upon the general system, as well as the local condition; but, while much improvement in our past methods may be possibly obtained by the newly introduced serum-therapy, the resort to calomel sublimations and intubations will continue to be necessary, in order to tide the patient over the dangers of suffocation.—Dessau in Arch. of Pediatrics.

Early Signs of Locomotor Ataxia

According to Professor Fournier, the first symptoms of locomotor ataxy may be classed as follows:—(1) Sign of Westphal; (2) sign of Romberg; (3) the "stairs" sign; (4) crossing of the legs; (5) walking at the word of command; (6) standing on one leg.

(1) Westphal's sign is well known; it consists in the abolition of the patellar tendon reflex, and is present in two-thirds of the cases.

(2) Romberg's sign can be thus appreciated: The eye is an indirect regulator of motion; it helps to correct deviations in walking and maintains the equilibrium. When a patient is suspected of incipient ataxy, it will often suffice to make him close his eyes when in the erect position to verify the diagnosis. In a few instances his body will oscillate, and if the malady is somewhat advanced he will be in danger of falling.

(3) The "stairs" symptom. One of the first and most constant symptoms of incipient locomotor ataxy is the difficulty with which the patient will descend stairs. If questioned closely on the subject, he will

say that at the very outset of his malady he was always afraid of falling when coming down stairs.

(4) The manner in which a patient crosses his legs is often significant. In the normal state a man when performing that act lifts one leg simply to the height necessary to pass it over the other, whereas in the affection under consideration he lifts it much higher than necessary, describing a large segment of a circle.

(5) Walking at the word of command. The patient seated is told to get up and walk instantly. After rising he will hesitate, as if he wanted to find his equilibrium before starting off. If while in motion he is told to stop short, his body, obeying the impulsion, inclines forward as if about to salute, or, on the contrary, jerks himself backward in order to resist the impulsion forward.

(6) The patient is asked to stand on one leg, at first with his eyes open, afterward closed. Although man is not made for this position, yet he can balance himself pretty firmly for a little while. The ataxic will experience a great deal of difficulty, and will instinctively call to his aid his other foot so as not to fall. If his eyes are closed he will not be able to stand one instant, and if not held he would fall heavily to the ground. Such are the symptoms of incipient locomotor ataxy. They will not be all present frequently, but they should be all sought for in order to avoid an error which might have grave consequences.—The Practitioner.

The Duration of the Contagiousness of Diphtheria.

The Journal des Practiciens contains an article in which the writer remarks that this question is the subject of much controversy., A young physician, M. Tezenas, recently collected sixty observations of patients who were attacked with characteristic diphtheria, and he divided these cases into three series, and made a bacteriological examination of the products taken from the bucco-pharyngeal mucous membrane and from the nasal discharge. The following results were obtained:

In the first series, in forty-four cases, the mucous membrane did not present any false membranes and there was no nasal discharge. On bacteriological examination, the cultures showed no bacilli, except in three or four cases, where Loeffler's bacillus disappears after four days.

In the second series, in five cases the mucous membrane was divested of its false membranes and the nasal discharge dried up. Nevertheless, Loeffler's bacillus persisted from twelve to twenty-eight days.

In the third series, in eleven cases the nasal discharge persisted, and the cultures with this discharge were positive, although those of the products drawn from the bucco-pharyngeal mucous membrane were negative. The presence of bacilli in the nasal discharge was observed for from five to thirty-five days.

These facts, says the writer, lead to the following practical conclusions:

1. In a number of cases the metadiphtheritic contagiousness ceases with the disappearance of Loeffler's bacillus. Nevertheless, the irritated condition of the bucco-pharyngeal mucous membrane, under the influence of intercurrent measles, favors the increase of the bacilli and their presence in the mouth; hence the necessity of a bacteriological examination of the products taken from the mucous membrane of this cavity.

2. Not infrequently (in eleven cases out of sixty) Loeffler's bacillus disappears from the throat, but is still found in the nasal discharge. The trouble is thought to be common coryza, which is a mistake, as this discharge is not accompanied with any symptoms of classic coryza. There is no conjunctival injection, or headache, or watering of the eyes. Ordinarily it is unilateral. The discharge is a transparent mucous and by no means the sanious discharge which succeeds false membranes of the throat.

3. According to M. Tezenas, Loeffler's bacillus exists in the nasal cavities as long as the nasal discharge continues, and disappears when it does. He adds that when this discharge is absent there are no bacilli in the nose.

In practice, then, says the writer, this fact must be taken into consideration, that a nasal discharge the origin of which does not coincide with the disappearance of the false membranes is not diphtheritic. It does not contain Loeffler's bacillus. The bacteriological examination proves that unquestionably.—N. Y. Med. Jour.

Infantile Myxedema.

William P. Northrup (Archives of Pediatrics) discusses myxœdema as illustrated by two cases systematically observed and treated in hospital.

Case I.—Female, 9 year old; parents not consanguineous; labor normal, not tedious; no instruments; up to nine months of life considered a perfect child; nothing of interest in history of parents; mother has two healthy children. At nine months this patient ceased normal development, and at nine years is mentally no older while physically is merely thickened. When the child was nine months old the mother thought that it did not sit up as her other children had done, and sought advice for the supposed weakness of the spine. She has sought aid from many sources, but has long since given up in despair. The patient looks like an idiot. Its head is large. Its color is peculiarly tallow-like. The hair is thin and poorly nourished; has no luster. This cretin has the characteristic flattening of the bridge of the nose, a tilting back, the nostrils facing forward. It has diffuse swelling under lids, puffiness of upper eyelids, pendulous cheeks, thick anemic lips. The tongue is swollen and protruding. Has fourteen first teeth. Gums are eroded, suppurating and filthy. The arms and legs are thick, the feet and hands stumpy; belly prominent and embossed with usual umbilical hernia. The skin, while never sweating, was soft and not abnormal except upon the hands and feet, where it had a parchment-like wrinkling. Patient had no hard or firm œdema.

The "supra clavicular pad" is soft and flabby. The thyroid gland is present and seems a little enlarged.

Treatment.—At hospital her temperature was found to range from 99.5° to 100° daily; respiration 16 to 20; pulse 80 to 88; obstinately constipated; gums habitually ulcerated and foul.

Plan of treatment was to administer a reliable form of sheep's thyroid gland regulating the amount of the range of the temperature Crary's formula was used. The directions were to begin with one minim three times a day, increasing the dose one minim every second day until the temperature rose and try to keep the latter at a point just below 100° F. On the fourth day the temperature overstepped the limit and the thyroid was stopped for a while.

After eight days of treatment the child was improved in these respects: Tongue markedly smaller, countenance brighter, taking more food and greater variety. Cut two teeth (canines). Good natured and much brighter the mother thinks. Bowels are regular.

Case II.—Male, 12 years old; German descent. In hospital seventy-six days; improved. Family history not known. Patient is short and stumpy, head large, long antero-posteriorly, flattened at bridge of nose, nasal openings pointed forward, limbs short and thick, abdomen prominent. Looks fairly intelligent, eyes bright. When suddenly asked his name he would seem to be mentally rummaging to find it. He would shape his lips, take a long breath, and yet the answer was delayed. When it finally came it was a thick half-nasal mumble. He seemed to be good-natured and happy.

Treatment.—Thyroid extract (Crary's), one minim three times a day, and increased by one minim until the temperature reached 100°. The progress of the boy was favorable in these respects. He seemed mentally brighter, was a little more active, and grew in height 1.5 cm. —Med. Review.

DIETETICS.

Benefits of a Meat Diet.

In older countries the lower orders, as a rule, have but a low vitality. It may be truer to say that the vital volition is weak. Let the learned settle the definition. The fact is easily accounted for. During generations upon generations the majority of European agriculture populations lived upon vegetable food, like the majority of Eastern Asiatics, and with the same result. Hard labor produces hard muscles, but vegetable food yields a low vital tension, so to say. Soldiers know it well enough. The pale-faced city clerk who eats meat twice a day will outfight and outlast and outstarve the burly laborer whose big thews and sinews are mostly compounded of potatoes, corn and water. —The Century.

Milk Diet in Typhoid Overdone.

Da Costa thinks the exclusive milk diet a source of mischief rather than good, and recommends three parts of milk alternated with one of broth. He, however, evidently does not recognize the fact that the latter has scarcely any food value, the little extract of meat it contains acting solely as a stimulant, and, moreover, with a great tendency to cause flatulence. It has on several occasions been pointed out that whenever curd can be seen in the motions, too much milk is being given, and it may even indicate that it is not being digested at all. It is best replaced by white of egg beaten up and largely diluted with water; in this way can be introduced any requisite amount of real food, and in the blandest and most readily digestible form; it leaves no solid residue, and can cause neither diarrhœa nor gaseous distention.—Provincial Med. Jour.

Regulations for Consumption Sanitaria.

The Comté Consultatif Francais d'Hygiene Publique has officially endorsed the following regulations, drawn up by M. Netter, for the sanitaria for consumptives: (1) Sanitaria should be built upon elevated sites surrounded by cultivated grounds and parks, these making a boundary between the public and the patients, who should confine themselves within its limits as much as possible; (2) each establishment should be provided with a steam apparatus for the purpose of disinfection and through which all the body and bed linen and clothing should be passed before being washed; (3) rooms should be disinfected and repainted before they are occupied by new patients, and all floors should be covered with linoleum; (4) all excreta and dejecta should be thoroughly disinfected before being disposed of; (5) patients must be prohibited from expectorating elsewhere than in spittoons provided, and these must be scrupulously disinfected every day.

Prophylactic Effect of Sea Air in Tuberculosis.

M. Lalesque has studied the prophylactic and curative action of the change to the sea air of Archachon in 220 subjects sent thither, either threatened with or suffering from the tuberculosis in different form. He gives the following results: Prophylactic action 50 cases, 50 recoveries. Curative action, 170 cases; in the first stage 73 cases, 22 recoveries, 39 ameliorations 12 aggravations or deaths: in the second stage 37 cases, 1 recovery, 24 ameliorations, 12 aggravations or deaths: third stage 60 cases, 4 recoveries, 21 ameliorations, 35 aggravations or deaths. M. Lalesque observes that the sea air, in common with that of mountains, is notable for its purity. —Am. Practitioner and News.

VITAL STATISTICS—THE SCIENTIFIC BASIS OF SANITATION.

By C. L. WILBUR, M D.

In selecting the above title for some brief remarks explanatory of the present condition of the registration of vital statistics in Michigan, my intention was not to arrogate to the subject with which my paper is concerned any exclusive credit for the advancement in sanitary methods that has characterized the last few decades of this century—advancement in lines that mark the present age as vastly different in the objects and methods of medical effort, and in the ideals set before the physician for attainment, from earlier periods when therapeutics claimed the leading position that is to-day held by prevention. Many factors have contributed to the progressive state of preventive medicine. I wish to call attention to only one—one, however, that, from its association with the early sanitary movement in England and from its admitted necessity as a measure of sanitary progress, cannot be omitted in framing an enlightened system of public-health legislation: I allude to the registration of mortality, the keeping of the death-rolls of the State.

Out of death comes life. From the lessons learned from a correct and timely system of vital statistics result life-saving in the present and instructive suggestions for the future prevention of disease. I am now speaking, it should be understood, of a satisfactory modern system of registration of deaths, and not of the very imperfect one now in vogue in Michigan. It is evident, I think, without special discussion, that the knowledge of the occurrence and geographical distribution of infectious disease in this State may be of the greatest practical importance, and by the aid of an efficient State Board of Health, such as we possess, may result in the saving of many lives each year.

The progress of modern sanitary science may be dated from about the time that the registration system of England, under Dr. Farr's able management began to afford practical results. Sanitary science and vital registration have flourished together and declined together and it is evident, from the nature of the case, that sanitary measures cannot be intelligently tested except there be some method of verifying and checking their results. This it is the function of vital statistics to do. For this reason I think that vital statistics may be called the scientific basis of sanitation, in the same sense that the balance, since its memorable employment by Lavoisier in the determination of atomic weights, has been considered the basis of modern chemistry. Statistics is only a tool, whether employed as auxiliary to practical sanitary work or for the deduction of evidence on abstract questions, but that tool is a necessary one. While it does not supplant other means of research—while the scalpel, the microscope, the balance, the test-tube, the culture-tube of the bacteriologist, the clinic and the bedside will ever be essential to a correct knowledge of disease,—certain very important elements of our knowledge can be obtained in no other way than by the intelligent employment of what may be called the statistical technique.

What is death-rate? The practical bearing of vital registration upon preventive medicine is well seen in the common employment—often, it is true, incorrectly—of the term death-rate. When an epidemic prevails —when one city wishes to be considered more healthful than its neighbor—when a health officer wishes to show that his administration, or that of the board of health of which he is a member, has accomplished great results for the public good (by which he hopes to be retained in office)—the appeal is to the death-rate. And it is safe to say that if the people at large knew more definitely just what the death-rate is, and the fallacies that are likely to be indulged in, whether from ignorance or design, in its statement, much current misrepresentation would be done away with. I have in mind two cities of fairly large populations, whose health officers, within the present year, have misrepresented the death-rates in their official reports to a very large extent. It happened in both cases that the errors made more favorable showings for the cities; and it is significant that they passed without objection from the press or people among whom they circulated.

The death-rate is a compound term denoting the relation of all the deaths that occurred in the given period (year) in the county, State, or city, to the mean population of the same place. A statement of the number of deaths when the population is not known is worthless for fixing the mortality. A partial statement of the deaths that occurred is likewise of little value. Such partial statements the best we possess at present for this State, are only of use in comparison with previous years of the same registration in which the percentage of deficiency may be presumed to be about the same. Vital rates based upon such imperfect returns are worthless for direct comparison with those of other States and countries in which accurate registration prevails. Again let it be emphasized, the death-rate or mortality is the ratio of deaths to population, both being correctly known. It is conventional to express the ratio as deaths or rate per thousand population. Thus the death-rate of England for the year 1892 was 19.0 per 1000; of Massachusetts for the same year, 20.6 per 1000 population. What it was in Michigan for this or any year we do not know. We do not even know what it is for any county of the State. The rate given in the registration report (9.5 per 1000) is certainly much below the truth. We know that the death-rates of a few Michigan cities in which accurate registration prevails are about the same as those given for Massachusetts, and a general knowledge of the population and of the character of diseases in the State as compared with States possessing effective systems of registration leads us to suppose that the death-rate of the State as a whole may lie between 16.5 and 18.5 per 1000 population. But we do not know what it really is; and it is this lack of the fundamental basis of knowledge that we should possess in order to build up a reliable and accepted system of public-health work, to which I wish to especially invite your attention.

While stress may be properly laid upon the correct statement of the death-rate, is to be considered rather as a preliminary step in the study of the mortality statistics of the State than as a final result. The gross or crude death-rate must be analyzed, and the conditions upon which it is based be thoroughly understood, before it can be safely used as a measure of comparison. The chief elements of correction are those relating to the sex and age-constitution of the population upon which it is based. The death-rates of infants and of the aged are very high as compared with those of persons in the early and middle periods of life. It is therefore evident that a population with an excessive proportion of children—a condition that frequently occurs in the newly settled States in which a large percentage of the adult inhabitants is of child-bearing age—will show normally a higher death-rate than States possessing a lower birth-rate. All vital statistics and in fact all statistics relating to the well or ill-being of the population are interdependent, and must be thoroughly sifted before reliable conclusions can be drawn as to the influence of special elements, as, for example, the mortality from unsanitary conditions or the prevalence of epidemics. In regard to the latter cause of mortality especially, as was well shown in the history of the late epidemic of influenza, a knowledge of the course of the disease in other States and among other populations is essential to the understanding of its effect in Michigan. Nearly all infectious diseases show a cyclical character in their course, and prevail with increased or diminished force over wide regions at about the same periods of time. A high death-rate from scarlet fever in Michigan, for example, is partially explained when we know that a similar increase has taken place in adjacent States. This fact relieves the health administration, to a degree, from responsibility for its occurrence, and suggests the study of widely distributed causes, perhaps climatic, as contributory thereto.

The time at my disposal will necessarily prevent my dwelling longer upon this interesting phase of the subject, in which, indeed, even the very imperfect information now obtainable in regard to this State has afforded some interesting results. I cannot do more than call your attention to the work that has been done in studying the course of different diseases of importance in this State during the last quarter of a century, some diagrams illustrating which you will find in the Registration Report for 1892—copies of which, in behalf of the Secretary of State, from whose department they are issued, I beg to offer to as many members of this Academy as may desire them.

One point only I wish to urge in conclusion, and that is that the important work of registration, if it is to be done at all, should be done thoroughly from the foundation. Imperfect data will cause doubtful and worthless conclusions. As a scientific man must take the greatest pains with the details of his experimental work or with his observations of nature in order that the work based thereon shall have substantial value—as it would be absurd in the highest degree to expect scientific acceptance for conclusions based upon partial and incomplete observations—so in the deductions from the present registration returns in Michigan we find that hardly a statement made in the registration reports for the last twenty-six years can be fully relied upon. It was the intention of the founders of the system to secure practical and scientific results of value; that the system instituted for such purposes in this State over a quarter of a century ago has failed to secure such results, is no reflection upon their judgment or upon the value of approved registration methods. The necessities of the case were not then as thoroughly understood as at present; indeed, Michigan then took a long step in advance in adopting any registration system at all, and it is to her credit that the system such as it is, has been maintained during this period. But it is to our discredit at the present time, with our definite knowledge of the deficiency of the system, and when the way has been practically shown to better results in this country, if we are content to allow it to remain in the old unsatisfactory condition. That such is the will of the people of the State, I do not believe. It is characteristic of Michigan and its people to desire that whatever is connected with the State administration or that affects the State reputation shall be well done, and I therefore believe that it will only be necessary that the people of the State shall understand the situation, in order to cause its improvement.—Am. Lancet.

Shortening of the Femur: Its Causes and Significance.

In all cases of shortening of the lower extremity it is highly essential to investigate the condition of the neck of the femur. If this plan be followed as a regular rule the explanation of many cases of shortening, otherwise puzzling, will be rendered plain. The causes of shortening of the femur may be classified as follows, viz.:

(a) Impacted fracture of the neck of the femur.

(b) Arrest of growth of the neck following disease the result of injury.

(c) Disease of the hip joint.

(d) Arrest of growth at the lower end of the femur from disease of the epiphysis.

(e) Arrest of growth of the lower end of the femur following disorganization of the knee-joint.

When the shortening of a leg amounts to a quarter of an inch and no more, the defect may be disregarded; oftentimes, this is present naturally. Again, half an inch shortening is by no means infrequent after fracture of the thighs. In measuring for any shortening that may be present in a lower limb, it is a good plan first to compare the length of both limbs from the top of the great trochanter to the external malleolus. If the measurement be the same on both sides, then it is obvious that the shortening must be confined to the neck of the shorter femur.—Thos. Bryant, F.R.C.S., in Med. Press and Circular.

REVIEWS.

NEW JOURNALS.

American Medical Review: A Monthly Review of Current Medical Literature. Danl. Lewis, A. M. M. D. Editor.

The end of the old year and the beginning of the new are favorite times for launching on the journalistic sea some new departure in medical literature. A prediction as to the success or failure of an individual aspirant for favor is about as difficult as the attempt to determine the utility of the vermiform appendix; and yet, we sometimes fancy the earmarks of success are unmistakable. In the present instance the distinguished gentleman who has assumed editorial charge, the clear and concise review of medical literature, the wide field covered and the insignificant price demanded—one dollar a year—make it impossible to contemplate a failure as long as the publishers—the R. N. Plummer Company—are willing to hold on to their end of the bargain. "This journal," says the editor, "will be to the medical literature of the day what the Review of Reviews is to the world of letters"—and if this prediction be as true of the subsequent issues as it is of Volume I., No. 1, we do not hesitate to welcome the infant and to endeavor to furnish our share of pabulum for its successful rearing. A short notice of this journal appeared in the January issue.

The Journal of Experimental Medicine. Editor Dr. Wm. H. Welch, Professor of Pathology Johns Hopkins' University. Publisher D. Appleton & Co., New York.

Another departure in journalism and one which appeals very strongly to the progressive physician, whether he happens to be engaged avowedly in the lines it purposes to travel, is the Journal of Experimental Medicine. We consider the matter to be one of such great importance that we give herewith the announcement from the publishers, omitting the names of the many distinguished collaborators who are announced to contribute to its pages: "In January, 1896, will appear the first number of The Journal of Experimental Medicine, a periodical devoted to original investigations in physiology, pathology, bacteriology, pharmacology, physiological chemistry, hygiene and medicine.

A suitable medium for the publication of articles embodying the results of original research is one of the most important conditions of fruitful scientific activity. The investigator in any department of science not only must know where to look for the literature of his own subject but he needs a journal which shall furnish prompt and worthy publication of his own work, which shall supply good reproductions of all needed illustrations, and which by the character and excellence of its contributions shall circulate widely among all workers in the special fields of research embraced within its scope.

Within recent years scientific medicine has made great progress in this country. The standards of medical education have been elevated, well equipped laboratories devoted to the various medical sciences have been established and the number of well trained investigators has steadily increased. With these greater opportunities the contributions to the medical sciences by American investigators are rapidly becoming more numerous and important.

Hitherto we have been deprived of the great assistance which can be rendered by a journal devoted exclusively to the medical sciences above specified. We ourselves, and still more foreigners, do not know where to look for many of the widely scattered original contributions of American investigators to physiology, pathology, bacteriology, and other medical sciences. A large part of these contributions are published in journals devoted mainly to the practical branches of medicine. Much of the best work is now sent to various scientific journals of Europe.

The time has come when we should have an American journal devoted exclusively to the publication of original work in the experimental medical sciences. Such a journal is an urgent need of our scientific workers in medicine. It should secure both here and abroad due consideration of work done in this country. It should stimulate scientific investigation and should extend the influence of scientific medicine. The practitioner who wishes to keep abreast of the times will appreciate the value of such a publication.

It is the aim of The Journal of Experimental Medicine to meet the needs which have been described. The journal is to be devoted exclusively to the publication of articles containing the results of original work in physiology, bacteriology, pathology, and other sciences mentioned in the first paragraph of this announcement. Especial care will be taken to supply good illustrations whenever needed.

That the journal will be of high character and truly representative of scientific medicine in this country is assured by the character of those whose co-operation has been secured. It is believed that the interest in scientific medicine in this country and the desire both here and abroad to find readily accessible the publications of American contributors to the medical sciences will secure a large list of subscribers for the support of the journal.

Dr. William H. Welch professor of pathology in the Johns Hopkins University, is to be the editor of the new journal and with him will cooperate a board of twelve associate editors as follows:

For Physiology.

H. P. Bowditch, M. D., Professor of Physiology, Harvard University.

R. H. Chittenden, Ph. D., Professor of Physiological Chemistry, Yale University.

W. H. Howell, M. D., Ph. D. Professor of Physiology, Johns Hopkins University.

For Pathology.

J. George Adami, M. D., F. R. C. S., Professor of Pathology, McGill University.

W. T. Councilman, M. D., Professor of Pathological Anatomy, Harvard University.

T. Mitchell Prudden, M. D., Professor of Pathology, Columbia College.

For Pharmacology.

John J. Abel, M. D., Professor of Pharmacology, Johns Hopkins University.

Arthur R. Cushny, M. D., Professor of Materia Medica and Therapeutics, University of Michigan.

H. C. Wood, M. D., Professor of Materia Medica, Pharmacology and Therapeutics, University of Pennsylvania.

For Medicine.

R. H. Fitz, M. D., Professor of the Theory and Practice of Physic, Harvard University.

William Osler, M. D., F. R. C. P., Professor of Medicine, Johns Hopkins University.

William Pepper, M. D., Professor of the Theory and Practice of Medicine, etc., University of Pennsylvania.

The Journal of Experimental Medicine will appear in, at least, four numbers during the year, and, doubtless, oftener. Whenever sufficient material is ready a number of the Journal will be issued. A volume of six to seven hundred pages will be published annually, with many plates and diagrams.

Papers for publication may be sent to the editor, Dr. William H. Welch, 935 St. Paul street, Baltimore, or to any one of the associate editors in the department to which the paper belongs.

Contributors will receive gratis fifty copies of their papers; additional copies may be obtained at the author's expense.

The subscription price will be $5.00 per volume. Subscriptions may be sent to the publishers, Messrs. D. Appleton & Co., New York, or to Mr. N. Murray, Johns Hopkins University, Baltimore.

NEW BOOKS.

Practical Uranalysis and Urinary Diagnosis: A Manual for the Use of Physicians, Surgeons, and Students. By Charles W. Purdy, M.D., Queen's University; Fellow of the Royal College of Physicians and Surgeons, Kingston; Professor of Urology and Urinary Diagnosis at the Chicago Post-Graduate Medical School. Author of "Bright's Disease and Allied Affections of the Kidneys;" also of Diabetes: Its Causes, Symptoms, and Treatment." Second, Revised, Edition. With Numerous Illustrations, including Photo-Engravings and Colored Plates. In one Crown Octavo volume, 360 pages, in Extra Cloth, $2.50 net. Philadelphia: The F. A. Davis Co., Publishers, 1914 and 1916 Cherry street.

Had the author added "Treatment" to the Uranalysis and Diagnosis we know of no book in this line that would have in many ways been so complete and practical: as it is, the manual has been so favorably received as to rapidly require a second edition. Some of the plates are excellent and the text is usually full and clear. The scope can be understood by a statement of the subjects Part I. Analysis of Urine, General Considerations, Composition of Normal Urine Proteids, Carbohydrates, Abnormal Urine, Urinary Sediments, Anatomical Sediments, Gravel and Calculus. Part II. Urinary Diagnosis: Diseases of the Urinary Organs and Urinary Disorders (Sections X and XI). The Urine in Other Diseases and finally An Appendix on the Examination of Urine for Life Insurance. The book is certainly satisfying in the amount of information it contains.

Principles of Surgery. B. N. Senn's M.D., Ph.D., LL.D., Professor of Practice of Surgery and Clinical Surgery in Rush Medical College, Chicago; Professor of Surgery in the Chicago Polyclinic; Attending Surgeon to the Presbyterian Hospital; Surgeon-in-Chief to St. Joseph's Hospital; Ex-President American Surgical Association, etc., etc. Second Edition. Thoroughly Revised. Illustrated with 178 Wood-Engravings and Five (5) Colored Plates. Royal Octavo, Pages xvi, 656. Extra Cloth, $4.50 net; Sheep or Half-Russia, $5.50 net. Philadelphia: The F. A. Davis Co., Publishers, 1914 and 1916 Cherry street.

Dr. Senn's work on the Principles of Surgery is already familiar to most of our readers. If the first edition was good, the second edition is better; and of the many books that the author has written or rather brought out in the last few years, this is to our mind the most interesting of the series. The bacteriological elements in ætiology are probably given more prominence in all of the author's writings than in those of any one else; and in no other place does he state more clearly or more satisfactorily the best views. Over fifty new illustrations have been added, and altogether the work is more than ever worthy of the liberal patronage it has received.

P. Blakiston, Son & Co., of Philadelphia, announce a book on "Appendicitis," by John B. Deaver, M. D., Assistant Professor of Applied Anatomy, University of Pennsylvania; Assistant Surgeon to the German Hospital, etc. The book will be arranged in a practical and systematic manner. The History, Etiology, Symptoms, Diagnosis, Operative Treatment, Prognosis, and Complications of this disease will be given in the order named. It will contain about forty illustrations of methods of procedure in operating, and typical pathological conditions of the appendix, the latter being printed in colors.

NEW INSTRUMENTS.

AN IMPROVED SYRINGE FOR INFILTRATION ANESTHESIA.

BY BRANSFORD LEWIS, M.D.,
St. Louis, Mo.

During the past year I have been making large use of Schleich's method of producing local anaesthesia by infiltrating tissues with innocuous solution of salt, morphine, cocaine, etc., the anaesthetic effect resulting from the method of applying the fluid rather than from the drug or drugs employed in it. It has been a source of great satisfaction to both me and the patients on whom it was used. The minuteness of strength of drug employed, removes every element of danger from that source, even though a large quantity of the solution be injected; and the completeness and promptness of the effects are advantages readily evident.

But I have met with one objection that has restricted the use of the method in a marked degree. It is the fact that, no matter how easily and satisfactorily it may be employed in the superficial structures, where there are no large vessels in danger of being punctured with the hypodermic needle, when one is injecting in the depths of a wound in the neighborhood of large arteries or veins, as in enucloating bubo-glands immediately above the femoral vessels, etc., the likelihood of running the needle into one of them and producing disastrous results is not a fancied one.

By means of the needles represented in the cut, I have been enabled to do away with this difficulty. They are blunt-pointed, and made of German silver, so that, though of sufficient stiffness to be thrust into the connective tissues of a wound after the skin has been severed, they would not injure a blood vessel if pushed against one.

The anæsthesia is begun, therefore, with the sharp steel needle, and continued with either of the two silver ones. The choice between the latter depends on whether a curved or straight needle is more conveniently used.

The advantages offered by this improvement have shown themselves to be eminently practical and serviceable, and, in my estimation, will advance the scope and usefulness of the method to a great degree. This instrument was made for me by A. S. Aloe Company, of St. Louis, Mo.

Experimental Researches on the Transmissibility of Certain Neoplasms (Cylindrical Epitheliomata).

In a recent article of Dr. H. Morau (Arch. de med. experim. et d'anat. pathol.), furnishes an important contribution to the moot question of the inoculability of cancer. The starting point of the author's long and patient experimental researches was a white mouse, presenting in the right axillary hollow a tumor, the size of a small hazlenut, which was proved by histological examination to be a cylindrical epithelioma. A fragment of this neoplasm, removed with the most scrupulous attention to antisepsis, was inoculated under the skin of the axilla of white mice of different descent. These experiments gave a positive result, that is to say, they determined in the inoculated animals the formation at the point of inoculation, or in an other region of the body, small hard nodules which were cylindrical epitheliomata.

It thus follows that the cylindrical epithelioma of white mice may be inoculated by grafting on animals of the same species.

Another series of experiments, the details of which we cannot attempt to give in this place, has led the author to the following conclusions:

Heredity plays a very considerable part in the development of cylindrical epitheliomata in white mice by preparing a suitable soil for their evolution. These neoplasms vary in virulence and may break down the organism. Gestation hastens their evolution. They may become generalized, and this generalization is favored by a traumatism of any kind. As they pass through fresh organisms, they grow less inoculable and less virulent. Non-ulcerative neoplasms of this kind do not contain bacteria, but when they ulcerate they include all the bacteria of suppuration.

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A MONTHLY JOURNAL OF MEDICINE AND SURGERY

Scientia et Veritas Sine Timore.

M. E. GAILLARD, PUBLISHER.

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Articles for publication will be received with the understanding that they are contributed exclusively to this journal. Reprints will be furnished at actual cost, orders for which should accompany the manuscript. Authors of accepted articles may receive twelve copies of the issue in which they are published. Necessary illustrations will be furnished without expense to authors when suitable drawings or photographs are furnished.

CROOKE'S TUBES: ROENTGER'S PHOTOGRAPHY.

Nothing has occurred in the scientific world in a great many years that has a more intimate relation to medical and surgical diagnosis than the "new light" or more likely the new principle in photography which has been evolved from and through this new light. As yet our information is confined to the newspaper reports; but the immediate application to the human system of the possibilities in photographing certain opaque objects has opened up a wonderful field of interest and study. Roughly stated the matter is this: objects heretofore considered quite impermeable to light as at present known or understood—e.q.—wood, carbon, aluminum, ebonite, paper, papier mache, human flesh and leather—are easily transparent to this new light. Objects are photographed through a number of layers of aluminum with as much ease as if the atmosphere alone intervened. It is reported that the largest object yet photographed—a human head—has so terrified the original that he has not slept nor eaten. This is of course an exaggeration: but the bare skull must be a subject of considerable horror to a non-professional individual. The light is produced by a series of induction coils, so the papers affirm and is a possibility of almost any chemical and electrical apparatus shop; indeed in London they say that an ordinary electric light bulb without the carbon filament will answer the purpose. The stories of its practical application are coming thick and fast. One paper thus states in head lines the feats already accomplished: "delicate bones perfectly articulated, all the joints as clear as if you saw the real ones," etc., etc. The location and track of a bullet through bone is claimed for the process, and the possibility of a clear view of each and every organ in the body opens up a train of consequences which with the realization of the scheme, will necessitate further and fuller consideration. We hear that already this country is actively experimenting on these lines: that Belgium has ordered every hospital to be supplied with the proper paraphernalia for the work, and if all that is claimed for the tubes and the photography obtain, verily one's innermost thoughts may sooner or later be recorded on the sensitive plate. We confess that we are much interested, and if no other use than a diagnostic one could be made of the process, it would command serious consideration.

The Cure of Cancer by Carbolic Acid Injections.

Each year brings us in double lettered head lines, a cure for some hitherto incurable disease. One year it is one thing, another year, another; and yet, we struggle along with the fact still staring us in the face that there are a number of morbid states not amenable to known forms of treatment. Our amazement was only equalled by our distrust when we read in a morning paper "No trouble now to cure cancer: Dr. Yoshimatsu, a Japanese physician, makes a great discovery; overcomes the dread disease by powerful injections of carbolic acid." There are many things to be said on both sides as to the propriety or reverse of such constant sensational statements. Even when they are true—and this is unfortunately seldom the case—there is nothing accomplished by putting before the general public statements which mislead and later bring adverse criticism, not only on the authors, but on faithful scientific workers. No better illustration can be cited than the case of tuberculosis, in which a man of unusual ability and attainments was literally throttled and made to publish what he stoutly maintained was not yet in shape for general dissemination. As a matter of fact, so far from advancing the cause of the cure of tuberculosis, it actually retarded the work on the lines then seemingly hopeful, and the false hope and serious harm done to a great many sufferers cannot be easily reckoned. Our patients constantly ply us with questions as to the newspaper cases, and we are still inclined to answer as of old that scientific medical facts where it can possibly be avoided are not thus exploited. The professional men who can make them available for the public are the ones who are first to be informed, and it cannot but cause a serious misgiving to find such flaming announcements in the secular press.

MEDICAL NEWS AND NOTES.

The twelfth annual meeting of the Fifth District Branch of the N. Y. State Medical Association will be held in Brooklyn, on Tuesday, May 26, 1896. All Fellows desiring to read papers will please notify E. H. Squibb, Secretary, P. O. Box 760, Brooklyn.

The ninetieth annual meeting of the Medical Society of the State of New York, was held Tuesday, Wednesday and Thursday, January 28, 29 and 30, in Jermain Hall at Albany, commencing at 9.15 A. M. on the 28th, and ending at 1 P. M. on the 30th.

Business Committee: Henry R. Hopkins, Buffalo; Nathan Jacobson, Syracuse; J. M. Winfield, Brooklyn.

PROVISIONAL PROGRAM.

Tuesday, January 28, 1896,

PAPERS.—On Serum Therapy, Dr. E. H. Wilson, Hoagland Laboratory, Brooklyn; Water and its Relation to Disease, Dr. W. P. Mason, Troy; (Late of the Pasteur Institute, Paris); On Sepsis of the New-Born, Dr. M. A. Crockett, Buffalo; The Question of Puerperal Self-Infection, Dr. Chas. Jewett, Brooklyn; A Medico-Legal Note, Dr. A. Walter Suiter, Herkimer; Shall the State Attempt to Control Spread of Tubercular Disease? Dr. J. L. Heffron, Syracuse.

PAPERS.—Discussion: On Early and Latent Syphilis in Infants and Young Children: Opened by: 1. Dr. George T. Elliott, New York; Diagnosis and Treatment. 2 Dr. Ernest Wende, Buffalo; Pathology. 3. Dr. B. Sachs, New York; Nervous Manifestation: Discussion: Diseases of Intra-Uterine Life: (a.) On the Part of the Mother: Dr. E. H. Grandin, New York; (b.) On the Part of the Child: Dr. P. W. Van Peyma, Buffalo. Addresses: Medical Education of the Future: Dr. Charles W. Elliot, President of Harvard University; On Sloughing Fibroids Complicating Pregnancy. Dr. M. D. Mann, Buffalo; The Equilibrium Function of the Ear: Dr. Gaylord P. Clark, Syracuse.

PAPERS.—Scorbutus in Infants: Dr. H. C. MacLean, Brooklyn; Treatment of Malignant isease in So-Called Cancer Institutions: Dr. Nathan Jacobson, Syracuse; Alcoholism and Public Health: Dr. H. R. Hopkins, Buffalo; On the Evolution of Pathology. Illustrated by Lantern Photographs of those who have developed the Science, with Illustrations from their works: Dr. J. H. Hunt, Brooklyn.

Wednesday January 29, 1896.

PAPERS.—Abdominal or Vaginal Coeliotomy—Which? Dr. J. W. Whitbeck, Rochester; Vaginal Hysterectomy without Ligations: Dr. W. E. Ford, Utica; Complications in Abdominal Surgery requiring Intestinal Anastomosis: Dr. A. Vander Veer, Albany; Some Rare Complications of Appendicitis: Dr. Herman Mynter, Buffalo; Treatment of Fractures of the Patella by Continuous Extension, without confinement in Bed: Dr. J. D. Bryant, New York; Early Diagnosis of Tubercular Kidney: Dr. Willy Meyer, New York; The Improved Cesarean Section: Dr. J. Garrigues, New York; The Symptoms and Diagnosis in the Indigestion of Starches: Dr. Reynold W. Wilcox, New York.

PAPERS.—Congenital Dislocation of the Hip, with exhibition of case successfully operated: Dr. T. Halstead Meyers, New York; Heteroplasty with Celluloid to cover Defects in the Skull: Dr. Willy Meyer, New York. Discussion: On the Present Status of the Surgery of the Brain: Opened by: Dr. E. D. Fisher, New York; Dr. M. A. Starr, New York; Dr. Seneca D. Powell, New York; Surgery of the Skull; Dr. B. Sachs, New York; Surgical Treatment of Epilepsy, Dr. Charles L. Dana, New York; Craniotomy and Imbecility and Epilepsy, Dr. James W. Putnam, Buffalo; Dr. W. C. Krauss, Buffalo; Dr. George Woolsey, New York. At 4 o'clock. Address Irritation and Counter-Irritation: Prfo. Wm. Pepper, Philadelphia. Address: Deficient Excretion from Kidneys not Organically Diseased, in some of the Disorders Peculiar to Women: Prof. Jas. H. Etheridge, Chicago.

Wednesday evening anniversaryy address, etc. On the tudy of Pathology by Comparative Methods.

Thursday, January 30, 1896.

PAPERS.—Re-organization of the Coroner System: Dr. W. G. MacDonald, Albany; Distinctive Fractures of Railroad Surgery: Dr. R. S. Harnden, Waverly; Diabetes and Acetonuria in Children: Dr. W. S. Cheesman, Auburn; Development of Muscular Atrophy on a Basis of Old Infantile Spinal Paralysis, a Favorable Type: Dr. W. Browning, Brooklyn; To be Discused by Dr. C. F. Barber, Brooklyn; Value of Animal Extracts in the Treatment of Nervous and Mental Disease: Dr. Floyd S. Crego, Buffalo; On the Surgical Treatment of Retroversions and Retroflexions, with Special Reference to Vaginal Fixations: Dr. H. N. Pineberg, New York; Neuritis Complicating Dislocations of the Shoulder and Elbow; Dr. M. A. Veeder, Lyons; Trephining for Injuries and Diseases of the Cranium: Dr. W. W. Seymour, Troy; Difficult Perineal and Suprapubic Lithotomy: Dr. W. Hailes, Albany; Abscess of the Frontal Sinus: Dr. J. P. Creveling, Auburn; Some Notes on Trachoma: Dr. M. L. Foster, New York; Tetanoid Hysteria: Dr. Grace Peckham-Murray, New York; Treatment of Oedema of the Lungs: Dr. Louis Faugères Bishop, New York; Treatment of Sciatica with Nitro-Glycerin: Dr. W. C. Krauss, Buffalo; Treatment of Aspiration Pneumonia by Drainage by Inversion: Dr. W. W. Seymour, Troy; Second Report on a Case of Functional Albuminuria: Dr. Eli H. Long, Buffalo.

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ORIGINAL ARTICLES.

PRACTICAL POINTS ON PERITONITIS.*

BY CARTER S. COLE, M.D.

Mr. President and Gentlemen :—

The selection of the topic for this evening's paper, as given in the title, is not to stir up a wordy encounter, not to fruitlessly endeavor to cover so wide a field as peritonitis, in the limit of time during which you can be reasonably expected to give me your attention, not to enter into every little detail even on the lines upon which I shall more especially dwell, but to try to advance a few ideas which are the outcome of a personal experience—at times a sad experience—extending over nearly three years of hospital work and a number of years of private practice, to invoke your aid in solving some of the difficult problems that confront us in the management of this class of cases; and to enhance, if possible, the prospects of saving to usefulness and long life even one case that might otherwise be lost. If I review briefly and systematically the fundamental points in regard to this symptom, it is only to facilitate the principles upon which the rational treatment of such correlated conditions are based.

The usual division into primary and secondary may serve certain purposes, but none better than to enforce the belief that the former, even the so-called rheumatic, or, as the terminal event of Bright's, for all practical considerations does not obtain; in short, that no such division is a clinical phenomenon, and that we are called upon to deal only with secondary peritonitis: and this brings me to my first thought. Peritonitis is but the inflammation of the peritoneum, as the result of injury to itself or neighboring structure, or of disease of one of the organs which it covers (in part or whole), or of extension of disease to itself from other structures; in fact, it is for the most part (entirely, indeed, barring injury and primary tubercular peritonitis, if such a condition obtains) the symptom of disease of other tissues or organs.

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* Read before the "Society of the Alumni of Charity Hospital."

As to etiology, we have every reason to believe that it is always bacterial, and "that no single variety is alone concerned in the inflammatory process."*

In cases of intestinal origin, the colon bacillus is constantly present: the streptoccocus pyogenes in puerperal peritonitis:† the staphylococcus pyogenes aureus or albus after laparotomy: the amoeba coli in some cases of amoebic dysentery: and even the diplococcus pneumoniæ is sometimes found.

While this is gratifying to know, we cannot help reflecting that unless a proper appreciation of the probable source of the peritonitis is quickly gained, our definite information as to its bacteriology will depend on the compunctions of relatives in the matter of an autopsy.

Doubtless the exudation, whether fibrinous, serofibrinous, purulent or hæmorrhagic, is closely associated with the bacteriological conditions present; and while it may facilitate a proper prognosis, we are again reminded that expeditious proper treatment alone will often give us such knowledge in time to be of service.

The matter is thus stated in brief by Johnston.‡ "For all practical purposes, peritonitis may be considered as caused by micro-organisms rendered operative by favorable local disturbances. In most cases it is consecutive to infectious disease of some other tissue or organ, contiguous or remote."

The symptomatology need detain us but a moment; of special importance are the pain, intense, cutting, piercing, griping, intermittent, diminishing as the disease extends, with or without a chill; vomiting, increasing, intractable as the abdomen becomes more and more distended, until intestino-peritoneal septicæmia completes the scene and destroys the patient. Of practical import is the fact that at the outset the disease is localized, its origin is generally discoverable, its etiological diagnosis possible, its cure probable. Nothing is more hopeless to diagnose as to origin or to treat than a general peritonitis, with intestinal paresis and septicæmia, though even in such cases the possibility of rescue from death justifies any procedure that is based on a rational determination of the original disease.

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* An American Text Book of the Theory and Practice of Medicine. Pepper Vol. II, p. 900.

† Osler, Practice of Medicine.

‡ Annual Universal Medical Sciences, 1890. Vol. I, D. 10.

One more point in regard to the severe pain: in most of the cases originating in disease of the vermiform appendix, as pointed out by Richardson, perforation in all probability occurs at this time, and every hour lost thereafter simply encourages and in most cases assures a general septic peritonitis.

As to diagnosis: the previous history, the possible origin, the extent, the condition and surroundings of the patient, the determination of present or past kidney lesions, the latter having a special bearing on the treatment, are all matters of grave import in making the diagnosis and in directing the course to be followed in handling the case.

We are too apt to be prejudiced and influenced by opinions of others, and to have our attention withdrawn from the real cause by some immediate conditions with which we are confronted: we are also easily lead into casting the case into the class of which we happen to see many examples: for instance, the constant report of cases of ekphyaditis would lead us to readily accept a diagnosis of this condition, where an accurate history would exclude its probability. On the other hand, it is not improbable that at least ninety per cent. (90%) of the cases of general peritonitis originate in the gastro-intestinal tract, and that of them ninety-five per cent. begin with disease of the appendix.

In cases originating in the genital apparatus, especially in the cases of females, previous tubal disease, tubal pregnancy, ovarian disease—whether abscesses, ruptured cysts, or twisted pedicles, are all to be carefully considered as possibilities.

Pepper* says that "Indican is present in large quantities in peritonitis," but there is "no excess in obstruction of the large intestine." Jaffé's method is suggested for its determination. Take H Cl. and urine equal parts, shake with two or three drops of fresh concentrated solution of chloride of lime, the result is a "dark blue or even bluish black color."

The possibility of apparent fluctuation when the intestines are distended with fluid contents, when the omentum is thickened and adherent to the colon (as in one of my own cases), and when there is considerable fat tissue or fluid in the abdominal wall, must not be overlooked, as noted by Pepper and others.

"For therapeutic purposes, it is most important to diagnosticate the cause of the peritonitis, and to decide whether the inflammation be circumscribed or spreading."† Really the inconsistencies in peritonitis are bewildering: the mortality of diffuse general peritonitis under any treatment is very great, but we are comfortably sure that in most cases there is a possibility in the early stages of assisting nature in making a limitation of the disease. The pulse which is known and described as typical of the disease, wiry, hard and quick, etc., too often fails to exemplify its type, and we are in a fatal case lulled into a sense of security where death is unavoidable. The temperature has for some time been noted as being unreliable, unless, especially in appendicitis cases, the low grade of fever is frequently associated with a high degree of sepsis, and corresponding mortality.

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* Loc. Cit. Vol. II, p. 905.

† Loc. Cit.

The cases in which there is a marked exacerbation are likely to be local. The pain which we have noted as being sharp, cutting, etc., may in fatal cases of septic peritonitis, following perforating appendicitis, be practically absent after perforation has obtained: although we are persuaded that the intense colicky pain, clearly localized, so often noted as occurring early in this affection is pathognomonic of perforation.

We come then to the matter of treatment, and it is under this caption that we purpose to enunciate some strong convictions that may be at variance with accepted opinions.

First of all, as a general principle we would assert that no man is justified in assuming the entire care of a case of peritonitis, who is unprepared to carry out whatever measures may be necessary in the treatment of the affection—a point thus emphasized by Osler: "In all cases of peritonitis it is best to have a surgeon in consultation early in the disease, as the question of operation may come up at any moment."

That "the first indication in the treatment of peritonitis is to relieve pain" (Pepper) we do not admit. Baldy* has struck the key-note when he said: "First determine the cause, if possible, and if it is found to be an organic one, the immediate use of the knife, followed by irrigation and drainage, is the only proper procedure. If it is of a doubtful character, first try purgatives, and be prepared for surgical interference at the shortest notice." We would add that the essential point is this: is the peritonitis circumscribed and likely to remain so: or, if not circumscribed can we make it so? As to the relief of pain, this is simple enough when we are assured of the disease and its origin, and have reached a conclusion as to its probable course, and our own management of the same.

It has been only a short time since I saw a case of uraemic coma, in which peritonitis was diagnosed, a condition which from the history and treatment seemed to me to have been precipitated by the use of opium: in short, the chronic interstitial nephritis had been entirely overlooked, or at least not mentioned. Not only, then, should we determine, if possible, the source and character of the peritonitis, by rectal and vaginal examination, if necessary, but also make an immediate examination of the urine, in order not to add uræmic coma to conditions already full of danger.

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* Local Medical News, Dec. 8, '88.

Again, the differences in the structures making up the pelvis must be kept in mind, in order to intelligently assist nature. So often she limits by her own resources a process which we make general by interference, and we can later come to the rescue without entering the general abdominal cavity: it is in pelvic cases, especially post-operative cases, that the saline treatment has given such favor and success. In cases originating in disease of the appendix, however, much may be accomplished by emptying the lower bowel by enemata (high or low), the increased peristalsis (before operation) due to salines, to our mind correspondingly increases the danger of breaking up adhesions, and of promoting perforation in the general abdominal cavity.

When we are uncertain as to perforation or probable perforation in such cases, operation it seems to us can alone be relied upon. When we are certain of either, the failure to operate cannot be excused. No matter how desperate the case, no matter how the family may look upon the operation as related to the death—if death follows—if it is the only hope, it should not be refused.

In one case, at least, that had been abandoned by the attending physician, that had been turned over to the spiritual counselors as beyond temporal assistance, in which I am free to confess I thought the chances of recovery almost nil, success and recovery did follow the operation; and in several in which I felt sure that death was, under inoperative measures, assured, recovery followed the operative method.

Where intestinal paresis (not due to opium) already exists, the cases are desperate in the extreme, especially when the intestines are unequally distended. Unless sulphate of magnesia (a sure saline cathartic) and strychnia instituted early after operative procedures, are productive of catharsis in thirty hours, we are in despair.

If a pus tube has ruptured into the abdominal cavity, or a tubal gestation, immediate operative interference is demanded. If a retro-peritoneal abscess exists, operative interference shortens the period of recovery, and lessens the dangers from sepsis (granting that the abscess would never rupture into the abdominal cavity): and in these cases it is seldom necessary to expose the general abdominal cavity to infection. So, too, for gall bladder cases: indeed, so generally for the localized processes which are simply abscesses.

When one friend after another among the medical fraternity has succumbed to appendicitis, after operative interference by our best known surgeons, we are apt to be shaken somewhat in our faith in such measures; but when we recall the utter hopelessness of perforation cases with general sepsis, the general cavity invaded, paresis and intestinal paralysis

—practically intestinal obstruction in its train, we again appeal to perfected surgical methods as nature's chief ally, and our best reliance.

To sum up then:

1. Peritonitis is palpably and practically always a symptom demanding surgical consideration: and in any case, a man who is unable to meet any surgical aspect that may arise, does himself and his patient an injustice not to have some one who is able to do it in consultation from the very outset.

2. In localized cases of pelvic origin non-interference, saline cathartics, hot douches and hot applications (cold in exceptional cases), followed later by appropriate and necessary operative treatment by abdomen or vagina preferably—where practicable—the latter.

3. In cases originating in disease of the vermiform a determination of the possibility or probability of perforation; of the existence of paresis (intestinal); of the limitations of the process, and in then making an immediate decision as to operation. Emptying the lower bowel is in all cases advisable, but salines should be used cautiously, if at all, before operation. Morphia in small quantities is permissible if we are well assured of existing conditions. In a considerable proportion of these cases, early interference offers the best chances.

4. In circumscribed cases, of whatever origin, where the process simply results in an abscess, it should be dealt with as such and surgically.

5. Rectal and vaginal examinations are not to be overlooked, as important avenues leading to a diagnosis. If aspiration is permissible and desirable, an incision is demanded.

TRANSLATION.

THE PATHOGENESIS OF THE ACUTE NEPHRITES.

Translated for Gaillard's Medical Journal

By H. McS. GAMBLE, Ph. D., M.D.,

Moorefield, W. Va.

Modern bacteriological works and experiments have brought a large contribution to the study of the acute forms of nephritis and have penetrated in great part their essence and their nature. On the one hand, the purely anatomical researches of Recklinghausen, of Waldeyer and Klebs, of Litten and of Eberth on the other, the experiments of Fischer (of Breslau), of Markwald, of Connheim, of Marix, of Grawitz, and the bacteriological and clinical studies of M. Bouchard and of Kannenberg, have contributed towards determining the role of the micro-organisms in the production of the nephrites. Whilst the former authors have depended only upon considerations purely histological, the latter have sought by means of experimentation to work out the solution of the pathogenic problem of the acute nephrites. Sometimes by the injection of putrid products, containing micro-organisms, they realized renal alterations in the midst of which were found the injected micro-organisms; sometimes, after the inoculation of schyzomicetes, of yeast and of moulds into the sanguine circulation, they discovered the passage of these different elements into the urine. M.M. Bouchard and Kannenberg, resting upon the triple determination of the micro-organisms in the blood, the kidney and the urine, have established the close relation of cause to effect which exists between the elimination of the microbes and the renal lesions.

The works of MM. Wissokowisch, Cornil and Berlioz and Enriquez, have furnished a large contribution to the pathogenic history of the acute nephrites. Finally M. Albarran has given the proof of the preponderant role of the micro-organisms in the ascendant nephrites, consecutive to the infections of the urinary passages.

To sum up, these authors have shown how, in the course of general and local microbic diseases, the renal parenchyma may allow itself to be invaded by different micro-organisms, whether by the descending route, the blood, or by the ascending, through the urinary passages.

II.

The Role of the Micro-organisms, Of Their Toxines.—Of The Organic Products, Animal and Vegetable—The Determination of The Acute Nephrites.—Hypothesis Upon The Influence of Cold.—Of The Dermatoses of Burns.

In the earlier period of bacteriological discoveries, the action of micro-organisms was exaggerated: all the disorders that appeared during the course of an acute infectious disease were charged to the account of the passage of the pathogenic microbes through the renal filter. But it has been demonstrated that the micro-organisms never passed through the sound membranes, and that their passage through the kidney indicated its alteration and constituted a complication. This law ought to be accepted as generally true, although new experiments may demonstrate that certain micro-organisms are capable of insinuating themselves through the healthy epitheliums (kidney, intestine, placenta), and overcome, without changing them, the natural barriers of the organism.

Likewise, it is only in determined conditions that microbic nephritis is observed. In every case the anatomical demonstrations which have revealed the presence of the micro-organisms in the kidneys attacked with acute nephritis, and the histo-bacteriological researches which have established the existence of these micro-organisms at the same time in the renal lesions and the urine, sufficiently prove their direct destructive action upon the renal epitheliums. It is thus that the bacillus of typhoid fever has been found in the typhoidic nephrites, that the pneumococcus of Talamon Fraenkel, the streptococci have been exposed, sometimes only in the kidneys attacked with pneumonic and erysipelatous nephritis, sometimes in the kidneys and the urine at the same time. The bacillus-coli has been demonstrated in the kidneys of a woman suffering with gravidic nephritis, by MM. Achard and Renault.

Although MM. Chautemesse and Widal, Ribert and Berlioz and other authors have been but very rarely able to discover the presence of micro-organisms in the region of the renal lesions, the role of these latter in the production of nephritis admits of no doubt. The various and contradictory results obtained by authors as regards the subject of the presence or absence of micro-organisms in certain acute nephrites of microbic nature demand in order to be understood, some general considerations.

It is necessary to bear in mind, when the nephrites are produced by micro-organisms, the nature of the infectious agent, its quantity (septicæmia), its virulence, the duration of the infection, the resistance of the subject and the more or less pronounced alteration that the kidney presents at the moment of infection. But, at the very outset, it is necessary to take into consideration the greater or less affinity of the blood towards certain pathogenic microbes. This affinity is but slightly marked for the bacillus of Eberth more pronounced for the pneumococcus, and above all for the streptococcus and the staphylococci. So, these latter are, in a relative manner, more frequently discovered in certain cases of acute nephritis, even in the nephrites observed in the course of typhoid fever and of scarlatina; in this case, they have acted apart from the general infection and in the character of a secondary infection; it is also in the character of a super-added infectious agent that the bacillus-coli determines attacks of nephritis in typhoid fever.

Be that as it may, in the acute nephrites, when the micro-organisms, carried along by the blood, are appropriated at the level of the renal filter, they comport themselves there each in a different manner.

The pneumococcus strikes the kidney at one single ime and leaves the nephritis to evolve without remaining at the seat of the lesions which it has engendered. If the pneumococcic infection, instead of being cantoned in the lung, is generalized, the infectious agent acts in an intense manner; it seems to possess a greater virulence, it extends into the whole parenchyma, of which it appears to beget the alterations; it there preserves all its activity; its elimination is slower. Such is the case reported by M. Claisse: his observation concerns a super-acute infection accompanied by general purpura and nephritis.

If the inflammation is circumscribed, the micro-organisms continue to pollute in the localized foci and in this event the pathogenic microbes may be found in the kidneys and in the urine a long time after the debut of the disease (the second or third septenary of typhoid fever). Such is in general the evolution of the typhic bacillus in the acute nephrites: it seems to limit its action and it is eliminated slowly.

Under other circumstances the infection acts in intensive doses and death comes quickly; at the autopsy the lesions are diffused, the epitheleums and the vascular apparatus (glomeruli, arteries, veins), are uniformly invaded by the micro-organisms (erysipelas).

The streptococcus and the staphylococci are by preference the agents of these infections, and according to the degree of virulence that they possess around the focus whence they started, they gather together en masse, create abscesses (miliary abscesses), provoke localized suppurations or some of the lesions of diffused nephritis. From the comparative researches instituted by MM. Lannelongue and Achard, it results that the renal lesions obtained with these two sorts of microbes, differ in that those of the streptococcus present neither the same frequency nor the same intensity as those of the staphylococci.

Finally, in consequence of anterior alterations of the kidney and of general troubles bringing about a slowing of the circulation of the blood, the micro-organisms have a tendency to become incrusted, in a manner, and to proliferate in the region of the kidneys. In these cases, micro-organisms, even attenuated, deposited in the kidney by the blood, have the time to proliferate on the spot and to provoke around themselves inflammatory reactions which are more or less circumscribed. According to the importance of the lesions, the micro-organisms will be eliminated and will disappear more or less rapidly from the renal parenchyma.

For some years past, the purely parasitic theory has lost ground. MM. Roux and Yersin, in the case of diphtheria, MM. Vaillant and Vincent in the case of tetanus, have demonstrated that the bacillus of Klebs, Loefler and that of Nicolaier, localized, the former in the region of a false membrane, tne second in the region of a suppurating wound, secrete each one a toxine which chemical analysis has approximated to the diastases. Diphtheria and tetanus are intoxications: the diphtheritic poison and the tetanic poison provoke the greater portion of the morbid manifestations and of the alterations that are observed in the course of these diseases. The same is true of the comma bacillus of Koch which develops in anærobiosis in the intestine. The toxine which it secretes, eliminated by the kidneys, exists in the urine. M. Bouchard upon inoculating a rabbit with the latter, has experimentally reproduced the symptomatic ensemble of cholera.

MM. Chautemesse and Widal, on the other hand, have produced attacks of nephritis by inoculating animals with the cultures of the bacilli of Eberth divested of micro-organisms.

All these facts contribute toward establishing the part that the microbic toxines play in the determination of certain acute nephrites. Besides if further evidence is required of their destructive action upon the kidney, it can be found, and that irrefutable, in the therapeutic experiments that have been made with the tuberculim of Koch; they have demonstrated in subjects subjected to the anti-tuberculous treatment the exquisite sensibility of the renal parenchyma for these poisons. With them, MM. Arluing, Graucher and Enriquez have succeeded in producing experimentally veritable diffused nephrites analogous to that produced by cantharides.

In the urine of patients with scarlatina and erysipelas, there exist toxines and it seems probable that in passing through the kidneys they must produce alterations in it.

If no experimental proofs exist to decide this action of the scarlatinous poisons upon the renal filter, the histo-bacteriological examinations of numerous kidneys attacked with scarlatinous nephritis bear an indirect support to the theory which regards the greater part of the manifestations of scarlatina as being of a toxic nature. These examinations have revealed rarely the presence of the streptococcus; per contra, the more frequently as in the nephritis of erysipelas, lesions are discovered without any micro-organisms. Still more, it seems proven to-day that the streptococcus by its toxines, is the cause of the erythemas of the purpura and of the eruptions of scarlatina.

We may therefore conclude that a number of scarlatinous nephrites or those of streptococcic origin are of a toxic nature.

The presence of micro-organisms in considerable quantity in the kidney does not suffice, besides, to determine attacks of nephritis, and in the cases relative to charbon, to the tubercle bacillus of Koch and to the streptococcus, it is easy to demonstrate the perfect integrity of the epitheliums apart from the microbic infection of the vessels or of the glomeruli of the entirety of the kidney. It seems, in effect, that if the infectious agents have not had the time to secrete their toxine, in consequence of the rapidity with which the general infection has caused death, the epithelial cells have not had the power to become impregnated therewith and to undergo more or less profound alterations.

But it seems sometimes that a double action, microbic and toxic, exercises its influence even upon the kidney, as this appears to take place in certain cases of nephritis of scarlatina and of diphtheria.

To sum up, there is therefore reason to admit, from a pathogenic standpoint, the existence of nephrites of a microbic nature (mono or poly-microbic, association of the bacilli of Eberth and of pneumococci with staphylococci or streptococci), of toxic and toxi-microbic nephrites. The toxic nephrites are by far the more numerous.

These toxic nephrites might, strictly speaking, comprise some of the cases described under the name of febrile albuminuria. Considered as produced by the alterations of the blood crasis, or by the anoxhâemia, or by the modifications of the blood pressure (increase or diminution), or by the hyperthermia, the albuminuria of the commencement of the pyrexias appears to be rather the expression of vaso-motor troubles with more or less considerable consecutive cellular alterations; these disorders might be determined by the toxines engendered by the general disease. This pathogeny of febrile albuminuria may explain the evolution of those nephrites, called fugitive (Brault), or abortive (Leyden, Eckstein), and their presence with a moderate fever or their absence in spite of a high temperature.

Microbic toxines, the excrementitial products of animal origin are assimilable by the disorders that they provoke in the kidney. Tyrosine, leucine, creatinine, xanthine, and hypoxanthine, injected every two or three hours, for a month, in the quantity of from one to two cubic centimetres, are irritating to the substance of the kidney. These experiments authorize us to admit that autointoxications may produce nephrites, Besides, for several years past, the existence of internal epithelial lesions has been recognized in the kidneys in the course of grave icterus, and veritable cases of nephritis have been observed which are probably caused by the toxines or the products of disassimilation incompletely destroyed by the altered liver; besides, in these latter times, experimenters have provoked acute inflammations, either in placing a ligature upon the choledoque canal, or in determining a progressive obstruction of the vena-porta. It is probable that toxines of organic origin must play an analogous role in the production of gravidic nephritis. It is rarely that micro-organisms are found in this latter, and, up to a certain point, one may incriminate a toxine that might be found in the urine of pregnant women (Doléris).

(To be concluded in the next number.)

SELECTIONS.

ADENOID GROWTHS IN CHILDREN.

By EUSTACE SMITH, M.D., F.R.C.P., London.

Physician to the East London Hospital for Children, and the City of London Hospital for Diseases of the Chest.

The subject of adenoid growths in children is one which at the present time is exciting a great deal of attention. The subject has been often discussed, but always from the point of view of the throat specialist. It may therefore be not without interest to regard it from the standpoint of the general physician, and to consider the large number of derangements which may be set up by the presence in the naso-pharynx of these vegetations. The frequency with which adenoid growths are met with in children three and four years old and upwards is a matter of everyday observation, but it seems not to be so well known that they are equally common in infancy, and, indeed, that even at birth the mucous membrane in the post-nasal region may be thickened and granular from hypertrophy of adenoid tissue. At this early age the patient is rarely seen by a throat expert, and unless the child's pharynx be explored with the finger the growths will often be overlooked by the general physician, for it is perhaps exceptional for them to give rise to the ordinary symptoms of nasal obstruction. Often, even when present in quantity, there is no snoring, and the child may sleep with his lips closed, for, as Dr. Greville MacDonald has pointed out, during sleep the instinct of nasal breathing almost always asserts itself, and even if the mouth be open at this time the tongue is drawn backwards against the palate so as to shut off this channel to the passage of air. In an infant the growths should always be suspected if the child's nose be broad at the bridge and faintly dimpled on each side at the upper border of the inferior lateral cartilages, and especially if when the chest is uncovered any retraction be noticed in the inferior region of the thorax. In childhood symmetrical retraction of the infra-mammary regions and depression of the ensiform appendix owe their origin with few exceptions to naso-pharyngeal obstruction. In marked cases, where little air enters by the nose, the nares are small and the alæ flattened, probably from disuse of the organ as an air passage. In such children other symptoms may be met with; the hard palate is exceptionally high, the tonsils are overgrown, and examination of the auditory meatus shows a deep depression of the tympanic membrane; but the symptoms first enumerated—viz., the altered shape of the nose and the retraction of the inferior regions of the thorax—are by themselves amply sufficient for diagnosis; and if any uncertainty be felt a touch with tne finger will put an end to it at once. In infants who suffer from this form of nasal obstruction one of the commonest consequences is snuffling in the nose with much mucous secretion. Non-syphilitic infants who snuffle are almost always the subjects of adenoid granulations. They seem never to be free from coryza, and often sneeze violently and discharge quantities of thick mucous from the nose. With this they may be hoarse, and from the persistence of these symptoms are often suspected wrongly of inheriting a venereal taint. I have fallen into this error myself, but am now convinced that persistent snuffling in infants is no sign of syphilis in the absence of other symptoms, and even that the addition of a large spleen is not sufficient warrant for such a conclusion. It will be noticed that the appearance of the nostrils is different from that seen in a syphilitic infant. No doubt the bridge of the nose is broad, but the nares are not cracked or dry or caked with crusts; the edges are moist, and without the little linear ulcers which are so common in the inherited disease. The obstruction, too, at this age is not nearly complete, and unlike the tainted infant, the child takes the breast with comparative ease.

A symptom sometimes present in new-born infants is a loud crowing or croaking sound which accompanies the breathing. Various names have been given to this phenomenon. It has been called "infantile respiratory spasm," "congenital stridor," etc.; but as it is not proved that spasm has any part in the mechanism of the sound a name which suggests such agency should be avoided. Thus congenital crowing is usually limited to inspiration, and is sometimes very loud, especially during sleep. It varies considerably in intensity at different times, and may sometimes cease temporarily, to return after a short interval. In one case which came under my notice the mother complained that often while sitting in the dining-room she could hear the noisy breathing of the child in the nursery on an upper floor of the house. The symptom according to my later experience, is seldom unaccompanied by post-nasal obstruction. Formerly such cases used to puzzle me greatly, for knowing nothing of adenoid growths, I did not examine for them; but since reading Dr. W. Robertson's paper,[1] I have always done so, and have never failed to detect either actual vegetations or a thickened, granular state of the post-nasal mucous membrane. It is indispensable that an exploration should be made with the finger. Laryngoscopical examination is always a difficult process in young infants, and mere inspection of the larynx and its immediate neighborhood gives little information even if successfully carried out. On the other hand, it is an easy matter to pass the finger upwards behind the soft palate, and if this be done granulations, when present, can hardly escape detection. It is only in exceptional cases, when collapse occurs in the lungs, that the stridor is associated with real dyspnœa. As a rule, in spite of the apparent labor of breathing, the child seems in no way depressed. His face is placid and shows no lividity of the lips and eyelids such as would result from imperfect aeration of the blood; nor is there hoarseness of the cry or cough, as in cases of papillomata of the larynx. The condition, however, is slow to pass away; indeed, as time goes on the croak instead of diminishing, often grows more and more pronounced. Dr. W. Robertson attributes the stridor to bilateral paralysis of the posterior crico-arytænoid muscles which expand the rima glottidis. He believes that the irritation set up by the adenoid overgrowth in the post-nasal region is transmitted to the medulla and there excites and exhausts the accessory nucleus as to induce depraved innervation in the muscles referred to. The growing intensity of the symptoms, he thinks, can be explained by a secondary contraction of the adductors, which are no longer opposed by the paralyzed muscles. However this may be, treatment should be directed to the pharynx, and if the unhealthy condition be remedied by scraping, followed by astringent and antiseptic applications, the breath sounds soon recover their normal quiet. Uncomplicated cases of this congenital crowing generally recover. The fatal cases are those in which collapse of lung has occurred. This accident is one which must always be kept in mind, for in a new-born infant it is very readily induced and if at all extensive is most dangerous to the life of the patient.

The contraction of the chest wall in the infra-mammary region, which has already been referred to, is most commonly met with in a child who is not the subject of rickets, after the period of actual infancy has passed. It is a consequence of collapse in the anterior part of the inferior pulmonary lobes, and if collapse be extensive the lower part of the sternum becomes prominent from retraction of the cartilages of the ribs. But in addition to this visible shrinking of pulmonary tissue it is common to find in infants and young children who suffer from these vegetations signs of collapse at the upper parts of the lungs. There may be deficient resonance with weak, harsh breathing at the supra-spinous fossa of one side, reaching, perhaps, a short distance below the scapular spine; and this may be accompanied by a dusky tint of the lips, but without other sign of imperfect aeration of the blood. At this period of life, too, a high-pitched percussion note at the supra-spinous fossa on either side, without notable alteration of the breath sounds, is commonly due to a patch of pulmonary collapse, and is very suggestive of adenoid growths, especially if the child at the time be not troubled with cough. Often when the naso-pharynx is obstructed by a mass of this hypertrophied tissue very hollow breathing conducted from the pharynx is heard over the upper part of the chest on either side. If this be conjoined with altered percussion note from collapse of lung the combination may suggest serious disease; indeed, the mistake is common and excusable. The usual explanation of this imperfect expansion is that owing to the impediment to the passage of air through the nose, and the child's instinctive return to nasal breathing during sleep, air reaches the lungs in too small a quantity to supply all the pulmonary cells, so that some of them remain undiluted. This explanation seems to me to be an inadequate one, for contraction of the chest wall must mean permanent collapse of portions of lung at the seat of retraction. But in a child with healthy lungs and normal power of expansion an intermittent reduction in the air supply can hardly induce permanent pulmonary collapse, for the moment the want of air makes itself felt the deficiency can be made good by breathing through the mouth. Indeed this is what actually happens. During sleep nasal breathing is carried on until discomfort is felt from imperfect aeration of the blood. The child then half wakes up, takes several deep breaths through the mouth, and immediately sleeps again. By this means all through the night any collapsed cells are being continually re-dilated; and in the daytime when respiration is almost entirely buccal the lungs will, of course, work normally. Permanent collapse of lung, when not directly induced by the blocking of a tube with a plug of mucous—and this is not now in question—must owe its origin to some agency which acts more continuously than the one referred to. The agency, it is not unreasonable to think, is nervous influence. We know that stimuli conveyed through the superior laryngeal nerve promote expiration, and that inspiration is inhibited by stimuli passing upwards through this nerve and the glosso-pharyngeal. Irritation continually applied to the periphery of these nerves must greatly restrict the admission of air and prevent complete dilation of the lungs. If by this means air enters the lungs in insufficient quantity, the parts least likely to be expanded are those which lie in contact with the ribs in places where the chest wall is flexible and can yield easily to the pressure of the air outside. In infants otherwise healthy who are troubled with adenoids the recession in infra-mammary regions and the supra-clavicular spaces may be noticed at each inspiration, and as the patients get older a permanent retraction of these parts becomes established. But the evil effect of this incomplete expansion of lung is not limited to a change in the shape of the chest wall. Without a liberal supply of fresh air the lungs must perform their functions imperfectly; and any check to the free and active use of an organ tends to hinder its healthy development. If lungs work lazily they are apt to remain ill-developed and undersized, and small lungs are always vulnerable lungs. If, then, in such a case there be any tuberculous predisposition, the liability to the development of pulmonary phthisis is sensibly increased. The mere presence of the adenoid vegetations themselves, quite apart from their influence upon other organs, must increase this liability. A mass of lymphoid tissue of low vitality is greatly wanting in phagocytic power, and the weakened cells may not only fail to protect the system against the invasion of pathogenic micro-organisms, but, as Dr. Sims Woodhead has pointed out, may even serve as a means of carrying the bacilli from the surface to the interior of the body. The glands in connection with the pharynx are often thus affected. In almost all cases of adenoid vegetations the cervical glands can be felt with unusual ease on each side of the neck, and it is not uncommon to find them enlarged and suppurating. In a great number—perhaps the majority—of cases of suppurating cervical glands or of cases in which scars pointing to old abscesses are present in the neck, the cause of the secondary trouble has been adenoid growths in the naso-pharynx.

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[1] Journal of Laryngology and Rhinology, October, 1891.

But of all the many consequences of post-nasal vegetations the influence they exert upon the nervous system is perhaps the most striking and important. There can be no question that in a neurotic child the worry set up by adenoid growths and the post-nasal catarrh they do so much to maintain is often great. One notable example of this nervous distress has already been referred to in the crowing breathing sometimes noticed in new-born infants, and, as has just been mentioned, insufficient expansion of lung may be ascribed with good reason to the same influence; but in neurotic children many other forms of nerve irritation may be traced to this source. Reflex spasm of the larynx is common with adenoid growths. Laryngismus stridulus I believe to be often dependent upon them, especially in those cases where the spasm occurs in children three or four years of age. In one such case, a child aged four years, the seizures, which had been frequent, ceased immediately the growths had been removed. In stridulous laryngitis, too, the nervous spasm is often, I think, due to this cause, and I have no doubt that the vegetations intensify the spasm of whooping-cough. Certainly children in whom the cough long retains its convulsive character of returns after an interval of health, are almost invariably sufferers from adenoids.

The above are instances of local spasms, but the nervous distress may be distributed more widely. Attacks of general convulsions, such as come on sometimes in rickety children without apparent reason, I strongly suspect to be due to the presence of adenoids. But it is not only in young and rickety subjects that these cases are met with; growing children seven or eight years old and upwards may suffer in the same way. In these cases reflex agency may not be suspected on account of the comparatively advanced age of the patient, and the seizures may be looked upon as epileptic. But reflex convulsions are not limited to any particular age; they depend upon the sensitiveness of the nervous system, the readiness with which it responds to irritation, and the strength of the stimulus, so that convulsive seizures of a harmless nature may be seen in neurotic girls eleven or twelve years of age. In these cases the actual exciting cause is generally a post-nasal catarrh, for it is usually during a mild feverish attack, consequent upon exposure to chill, that the nervous symptoms have occurred. Other manifestations of nervous worry may also be met with. Attacks of asthma are sometimes put a stop to by removal of growths, and Dr. Greville MacDonald informs me that in at least one case he has known obstinate nocturnal incontinence of urine to cease quickly after the operation.

In children who suffer from these vegetations the hearing is often very sensibly impaired. In some cases, no doubt, this is the consequence of post-nasal catarrh and blocking of the Eustachian tube, but it is often the result of otitis, and Meyer has reported that out of 102 cases he found no less than seventy-two to be suffering from some trouble connected with the ear. It is partly on account of their deafness that so many of these children are thought to be stupid, and there is no doubt that their faces often wear a vacant expression the silliness of which is not diminished by the mouth being held half open for purposes of respiration. But a really stupid child will often grow much more intelligent when the growths have been removed. These patients generaly complain of headache, giddiness, and noises in the head. The tinnitus and perhaps the vertigo are probably dependent upon the ear mischief, but the headache, I think, is often a consequence of general weakness. It is an important fact that the majority of children who suffer from adenoids show very evident signs of defective nutrition. Sometimes they are ill-grown, and almost always their circulations are languid and their feet cold. Moreover, they are pale and thin or flabby, and although not, perhaps, physically indolent are easily tired. The common explanation of this unsatisfactory state is that, on account of the obstruction to the nose and the persistence of the patient in nasal breathing in spite of all difficulties, the lungs are ill-provided with air, so that the blood is insufficiently oxygenized and becomes loaded with carbonic acid and other impurities. But this explanation is far from conclusive. I have often been struck by the fact—of the truth of which I am convinced—that the degree of anæmia and malnutrition, and indeed the amount of general physical disturbance excited by the vegetations is no just measure of the extent to which the nasal passages are obstructed; in other words, that the children whose nasal-pharynx is most completely blocked are by no means those whose nutritive deficiencies and nervous symptoms are the most pronounced. I believe their weakened state to be a natural consequence of the curious tendency to take cold shown by all the subjects of adenoids. They are like hot-house plants in their extreme susceptibility to trifling changes of temperature. A slight draught of air; a little too-prolonged exposure during the morning's bath: leaving the house on a raw day with cold feet, even although carefully clothed—all these are means by which chill may be incurred; and the consequent catarrh not only increases the worry in the post-nasal region and pharynx, but also invariably affects the digestive organs. These children may be said to live in a state of gastric derangement. Their stomachs are habitually out of order, and, however much they eat—and often the appetite is little impaired—their food seems to do them curiously little good. The natural consequences of this chronic dyspepsia follow: the child gets thinner and paler, and suffers not only from insufficient nourishment, but also from all the discomforts and evils arising from the passage along the bowels of undigested and fermenting food. There are few children with adenoid growths who do not give evidence of some of the ill consequences which have been described. A certain amount of collapse of lung, with consequent retraction of the chest wall, may be said to be always present, and in most cases the nutrition of the child is unsatisfactory. But it is the neurotic children who suffer the most. They may not, indeed, give evidence of direct irritation and spasm, but they are almost always anæmic and thin, and habitual sufferers from gastric derangement. In such children early removal of the growths is, of course, indispensable to improvement, and if nervous symptoms be present an operation is all the more urgently called for. So, also, in children of phthisical tendencies surgical measures should not be delayed, on account of the influence of the vegetations in checking nutrition and hindering the proper working of the lungs. In other cases, if the general health seems to be quite unaffected, an immediate operation is not needed; but wherever adenoids are known to exist the child should, if possible, be kept under observation, so that they may be removed at any time when they seem to be doing harm. The danger of deafness alone is one which it is of the utmost importance to guard against.

ALUMNOL AS A SURGICAL APPLICATION.*

Read before the Windsor, Ont., Physicians' and Surgeons' Association.

By DR. E. B. SMITH, Detroit, Mich.

Surgeon, Deaconess Hospital, Pres. Wayne Co. Medical Association.

All along down the line of generations past, step by step, we see the improvement in the giving of medicine to the sick and the dressing of their wounds. Man in his finer civilized state seems to require the talent of the world to be at hand when sickness or injury overtakes him, and so the surgeon feels a new stimulus when his co-operators place in his hands something that will be useful in aiding the parts that he repairs to again become normal.

He is constantly seeking newer remedies that will adapt themselves so that time and pain may both be cut to the shortest possible extent. Certain general inflammations are better treated with certain medicinal compounds, other inflammations respond to a certain remedy much more quickly than to any other, and so we find that certain remedies meet certain local lesions better than any other application;—these are axioms. To-day we are not bound down to any set rule or treatment, in wounds or injuries. Routine applications to all lesions and wounds are far from scientific. With these thoughts in mind, I wish to present to you the application of Alumnol in certain surgical cases where I have been led, by the chemical composition and nature of the drug, to believe that it is particularly adapted.

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*Reprinted from American Therapist, November, 1895.

The cases reported are not the only ones that I have personally treated with this remedy, but are only a few that will show its application.

An ideal surgical application, according to our present status of tissue re-generation and bacteriology, must possess germicidal properties without at the same time interfering with or destroying local cellular activity, and it must also be free from the danger of producing injurious effects if constitutionally absorbed.

If a powder, it should be soluble so that it may be applied either in powder form or in solution, and it should be cheap, so that a sufficiency of it always can be used. It should also promote tissue growth. It should not stain, and it would be an advantage if it caused no pain when applied. A new drug has been offered to the surgical world in the shape of Alumnol, which, while it by no means fulfils all the conditions above mentioned, is, in my mind, a very valuable surgical application. Although it does not seem to possess marked bactericidal properties, it does promote tissue activity and thus aids in the normal healing of wounded or abraded surfaces.

The next question to be considered is: are our ideas of the ideal surgical application what they should be? Have we the right conceptions with regard to bacteria and bactericide, and do we put a proper value on those preparations that act by stimulation?

When we put a solution of bichloride of mercury in a wound in order to prevent the growth of germs, what does it do? It kills perhaps those on the surface and thus often, no doubt, is beneficial, but how long do germs remain on the surface? Do they not, in an incredibly short space of time, penetrate to the interior of the cells on the surface, thence to the layer below and so on deeper down? How, I ask, is a solution of bichloride of mercury to reach those cells and kill the fructifying germs contained therein, much less the spores, unless it kills the cells also, for how is it likely that a protoplasmic poison like bichloride will single out and destroy the germs and leave the containing tissue cells uninjured? An application that destroys the tissue cells as well as the bacteria often defeats its own object for the reason that all of the bacteria are not destroyed and the dead tissue cells form an excellent medium for their growth and reproduction.

But whatever may be the effects of Alumnol considered from a bacteriological standpoint it certainly possesses what is commonly termed healing properties. By that we understand something that causes the cells to take on a healthy activity and promotes tissue regeneration.

The use of Alumnol in the treatment of abscess cavities is one that is likely to come into general employment, since this drug is soluble in purulent secretions and therefore does not plug up the small vessels; it is not corrosive, even in 19 per cent. solutions; it penetrates more deeply than other compounds on account of the fact that the albumen precipitated by Alumnol is soluble in excess of albumen. The wound soon closes up, the cavity becomes smaller and the purulent secretion less under its use. I have had some happy experiences in this line. Indolent ulcers, especially of the leg, seem to be favorably influenced by 5 to 10 per cent. solutions. It is not irritant, does not form an impenetrable coagulum; does not exert toxic symptoms by absorption, and can be used in solutions of sufficient strength to exert a beneficial and curative effect, without at the same time setting up too much inflammatory action.

As might be supposed it is also beneficial in endometritis, particularly the form due to gonorrhœa. I have personally had good results with equal parts of Alumnol and boric acid, dry, as a local application in the different inflammations of uterus and vagina. Since Alumnol is a rather powerful reducing agent it cannot be used in conjunction with such antiseptics as are easily reduced, for instance, silver nitrate or permanganate of potash; it may be nsed with boric or salicylic acid, zinc oxide or bismuth sub-nitrate. Chotzen recommends for vaginal catarrh the injection of a 1 to 2 per cent. aqueous solution.

A combination of Alumnol and zinc oxide makes a useful application in eczema as in the following dusting powder:

℞ Alumnol, 1 dram,
zinc oxide, 2 drams,
acid carbolic gtt. 2
M. ft. Pulv.
Sig: Local application.

Alumnol has the peculiar property of adhering very closely to the surface, thus protecting the skin from the air and external irritation; this is recognized as an important point in the treatment of eczema. The alumnol holds the zinc oxide down to the raw surface and the carbolic acid with which the two are incorporated tends to allay irritation and at the same time acts as an antiseptic.

In this way it also answers a good purpose in the treatment of superficial abrasions and the excoriations found in various skin diseases. Being soluble, it permits of more extended application than many other remedies, and may easily be combined either in powder, solution or ointment with such antiseptics as boric or salicylic acid. It may not be out of place to suggest here that the following formula will be found very useful in Cystitis: Alumnol, 1 dram, boric acid, 2 drams, water q. s to make 4 ounces. M. Sig., Inject into the bladder, 1 ounce of this solution with 4 ounces of warm water; after a few minutes this may be washed out with 1-2 pint of sterilized water.

I desire to report the following cases in which I have employed Alumnol:

Case I.—Mr. B., a man weighing 365 pounds, had suffered from proctitis and multiple abscesses of the rectum with the resulting fistulæ that are left after unoperated cases. It has not been my experience to find as many rectal fistulæ in any one case as this man presented; there were seven distinct sinuses, extending from three to five inches and a half out in the flesh to well up into the rectal pouch. The patient also presented a typical case of fatty degeneration of the heart, which, with his extreme obesity, made it an undesirable case and one of worry and work without much prospect of good coming from it. The parts were kept clean and well injected with peroxide of hydrogen. Under slight cocaine anæsthesia the tracts were lightly curetted and some of the smaller openings seemed to heal to a slight extent; this curetting was repeated several times without positive results; now and then one of the fistulæ would close up only to again form and re-open; I tried iodoform mixtures but with negative results. I then, with the assistance of Dr. E. W. Tonkin, incorporated powdered Alumnol in the meshes of sterilized gauze, rolled this into a firm stand, and passed it by means of a probe and small forceps within the fistulous tracts. Where possible, these strands were passed from one end of the fistula to the other. At the redressings where there was considerable callous material and granulating, the parts were first curetted and then again packed as described above. I subsequently had the pleasure of calling Dr. Tonkin's attention to the stimulating and healing process which the Alumnol brought about in this case. The patient at the present time has one blind fistular opening and another complete one, but gets along quite well, being continually on his feet from morning until night; before the treatment this was impossible.

Case II.—Mrs. W., family history decidedly tubercular, two sisters, as well as other members of the family having died with pulmonary tuberculosis. Mrs. W. had not had the best of nourishment, nor the best of quarters for the last two or three years, and had the care of three children who had followed each other in quick succession; she presented herself at my office with an indurated, breaking down nodule upon the cheek near the angle of the mouth on the right side.

I treated her constitutionally and locally for lupus tuberculosis, with arsenic and cod-liver oil internally and different remedies externally. Exhibited the patient several times at the Detroit Dental School, the surgical clinic held with Prof. G. S. Shattuck, M. D., where we operated upon the ulcer using cocaine for local anæsthesia, curetting the parts well and subsequently applying the nitrate of silver stick. This was repeated several times before the class and also at my office, but the breaking down and infiltration kept on, only abating after this thorough curetting and then but for a time. I then determined to use Alumnol as I had had such good success with it in indolent, varicose and other ulcers. After cleansing the face on that side and curetting slightly, without local anæsthesia, I took the powdered Alumnol and with a probe worked particles of the drug well into the ulcer. I then incorporated in sterilized gauze a goodly quantity of Alumnol, applied this over the ulcer and instructed the patient to keep it well in position. This procedure I repeated three times a week. Upon her next visit to the office after this dressing, I could easily notice a change for the better. The ulcer began to heal rapidly, and now at this writing, the parts show themselves to be materially influenced for the better. I cannot ascribe the result of this case to the fact that the patient was impregnated with arsenic, as she stopped the treatment for more than two weeks before I commenced the Alumnol treatment. Microscopical specimens were examined and tubercular bacilli were found at two different times, though not in large quantities.

Case III.—Mrs. N. had lacerated perineum which was partly repaired at her second confinement. I operated on her several weeks ago at the Deaconess Hospital, Detroit, and found the laceration complete involving some of the fibers of the rectal muscles. The laceration was about five years old and presented considerable hardened tissue; this was dissected out, and a slightly modified Tait operation made, the parts being brought together with bured catgut and kangaroo tendon and well dressed with Alumnol. Healing by first intention resulted, excepting one little point like the end of a pen holder. This is but a repetition of several other "flap" operations in which I have employed Alumnol as a dressing; I use it freely. My laparotomies at the above hospital have had this dressing for the last year, all healing by first intention.

Case IV.—A case of Dr. J. F. Bennet's: Necrosis of the sacrum, coccyx and ilium, due to injury; the buttocks and sacro-iliac region being full of sinuses. In this case I laid the parts well open, exposed the sacrum, lifted the sacral nerves from place, and chiseled out quite a portion of the outer plate of one side of the sacrum. The necrotic tissue had dissected its way under the great muscles of this region, making large pockets in every direction; those were curetted, cleaned out and packed with a dressing of sterilized gauze impregnated with Alumnol. The parts certainly healed and progressed nicely, although the patient ultimately succumbed to pulmonary tuberculosis, from which she was suffering at the time of operation.

Case V.—Mrs. Y., 30 years of age, had suppurative bursitis of the knee joint, possibly due to gonorrhœal infection. I treated it after incision with injections of carbolic, boric and salicylic acids and peroxide of hydrogen with no success; one or two injections of a 10 per cent. solution of Alumnol completed a cure.

Case VI.—Mrs. G., 50 years of age, had a varicose ulcer near the ankle, which had existed for some months and been treated with a number of remedies, internal and external, without appreciable effect. Alumnol was then applied in powdered form, and was followed by considerable improvement, the ulcer being now scarcely half the size that it was under the former treatment.

In conclusion, while I do not pretend to say that Alumnol is an ideal surgical application, I have had the happy experience that it has promoted the healthy healing of tissues after dissipating the morbid processes that previously existed.

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ABSTRACTS.

The Prevention of Blindness.

Dr. Benjamin Lee in the Annals of Hygiene gives an extended review of the preventable causes of blindness, many of them beginning with the earliest hours of life. He laments the fact that while the state is ready to provide relief for defectives, it is ever slow to prevent their existence. Purulent ophthalmia of the newborn, is the cause of a large percentage of blindness and preventable. It is an infectious disease and is due strictly to infectious matter which has come into active contact for a somewhat prolonged time, with the conjunctiva. The author holds that one-third of those now blind might by prompt and proper treatment have been saved from this calamity. Active measures have long been taken in European countries to prevent this class of blindness. The state of New York has a law which requires midwives and nurses to report every case of inflamed or reddened eyes occurring within two weeks after birth to some legally qualified physician.

Although the eye of the child who has escaped ophthalmia in infancy, is as a rule good before attendance at school is begun, we then have a larger and larger percentage of pupils with imperfect eyes as they advance from the kindergarten to the high school. It seems certain that many of the imperfections developed during the years of school life are preventable. The author suggests the following causes for such imperfection:

(1) By using the eyes constantly at short distances they soon become of value only for seeing objects close at hand.

(2) By using the eyes too constantly, and too long at a time. The eye is a very delicate organ, its parts become weary like the rest of the body. If overworked serious results follow. The eyes should never be used when they ache, pain, or smart, or when vision is weak or blurred.

(3) By using them when weak from sickness. After the diseases of childhood, as measles, scarlet fever, whooping-cough, etc., the eyes are often left weak, and may be many months in recovering their full strength. If at such times they are much used in reading or studying, they are very liable to receive permanent injury. To this cause may be laid a large proportion of the defective eyes in our schools.

(4) By using the eyes in insufficient light. Very many of our school-rooms are poorly lighted. Children cannot see in them on dark days. Rooms are made still darker by the use of curtains and blinds, which are often partly closed or drawn and are placed at the top instead of at the bottom of windows. Windows are very often too small. They are often filled with flowers. If children study in the evening it is too often with a poor light.

(5) The print of school-books is too often fine and indistinct.

(6) Especially is this the case with regard to maps, which are in the highest degree confusing and distressing to the vision.

(7) Polished blackboards are both distressing and trying to the eye, the writing on them not being visible except from certain points of view.

(8) The chalk-dust caused by the use of the blackboard and of a dry cloth or eraser is often very irritating to the eye.

In what way can the state prevent these deplorable results and preserve the normal vision of its people?

First. By taking pains that school-directors shall be persons of intelligence and education, and that positions on school-boards shall not be the rewards of political tricksters and ward workers.

Secondly. By issuing instructions to school-directors, as to the construction and maintenance of school edifices, especially with regard to the proper introduction of light.

Thirdly. By making positions on school boards open to women, who, as a rule, are more keenly alive than men to the necessity for guarding the health of children in every respect.

Fourthly. By compelling all applicants for positions as teachers, to pass an examination on the hygiene of the school-room and especially on the hygiene of the eye.

Fifthly. By printing and distributing, not only among these functionaries, but also among parents and the public generally, brief circulars of information and instruction on these subjects.

Sixthly. By obtaining the introduction into public prints and the daily press of articles of the same nature.

Seventhly. By diminishing the hours of study, especially in the primary grades, and diminishing the amount of reading and writing now required during study hours, by encouraging the use of object teaching and illustrated lectures.

Eighthly. By stamping out all eruptive contagious diseases, which are known to have inflammation and ulceration of the eyes or asthenopia as their sequelæ.—Archives of Pediatrics.

Penetrating Wounds of the Chest.

Huget and Péraire (Revue de Chirurgie) after a thorough discussion of this question, and a number of interesting cases, come to the following conclusions:

1. That it is absolutely necessary in these cases to treat the patients at the time and in the place where the accident occurred without waiting to carry them to a hospital. The jolting and movements inevitable during transportation are very liable to produce a hæmoptysis, or increase one already present and so cause death.

2. The tendency to syncope should be respected, as it favors hæmostasis. Consequently, subcutaneous injections of ether should rarely be given unless the depression is marked. The injection to be preferred in these cases is of Caffeine or of artificial serum.

3. The treatment of these wounds by ordinary means is useless in the majority of cases unless the patient is put absolutely at rest. The most perfect repose is secured by immobilizing the thorax by means of adhesive plaster and a well-applied bandage.

4. This method of treatment does not, of course, preclude the use of antiseptic treatment of the wound, with ligation of arteries, suturing of the wound, and the use of compressive and occlusive antiseptic dressings.

5. In case a hæmothorax arises from the injury of a large vessel the treatment should be one of "aimed expectation," and is entirely dependent upon the conditions present. Symptoms and complications are the guides of treatment. Thoracocentesis should not be practised unless the extravasation of blood is very large and death from dyspnœa is threatened.

6. In these cases the toilet of the person, after the wound has been dressed, should be avoided.—International Medical Magazine.

The Etiology of Diphtheria and Pseudo-Diphtheria.

Lennox Brown discusses the predisposing causes of diphtheria under three heads. (Liverpool Med.-Chir. Jour.):

A. Climatic and Habitation Surroundings.—Evidence upon this subject, although profuse, is extremely contradictory and uncertain. It is well known that it is more prevalent in regions in which the soil is clayey and wet. It is more common in temperate than in torrid or arctic climates. It is found in valleys rather than on the hilltops, and prevails in those months in which the rain-fall is greatest. Insanitation, the author believes, may be directly and primarily a cause. He holds also that in cases of diphtheria, attributable to contagion or importation, the infection-element is highly influenced in its development by anti-hygienic conditions of individual or local surrounding; and lastly, that such anti-hygienic conditions are not only responsible for the development of diphtheria, but that they do unfavorably influence the gravity of an epidemic or of an individual case. Among the reports of forty-five epidemics, evidence of defective sanitation was discovered in 93.3 per cent. The nature of these assigned causes may be classified as follows:

Cases due to insanitation or polluted water	29
Cases due to infected milk supply	4
Cases due to contagion in schools, etc	11
Cases due to doubtful	1
	45

This proves that milk is not as common a source of infection as it is usually thought to be.

B. Preceding or Concurrent Epidemics of Other Specific Fevers. —The fact that scarlet fever is frequently accompanied by true diphtheria, is undoubted. The author believes that measles is also complicated by true diphtheria more frequently than is usually supposed. As a complication or concurrent disease of small-pox it is most rare. It has, however, seemed to be more common during epidemics of enteric or malarial fevers.

C. Constitutional Predisposition.—The author believes with Sir William Jenner that the influence of family constitution is decided in determining the occurence of diphtheria. This is, perhaps, explained to a certain degree by the fact that obstruction of the naso-pharyngeal passage and the occurrence of adenoid growths are more common in.

certain families. The author is strong in his opinion that diphtheria rarely occurs in a child under seven years, who is not a subject of these glanular overgrowths. In many cases of diphtheria in young adults, tonsillar enlargement will be found to have persisted. It has been particularly noted in nurses, who have taken the disease.

As to the exciting cause, the author accepts unhesitatingly the Klebs-Loeffler bacillus. He describes in detail this bacilli, and also the various forms of germs which may be found producing so-called mixed infection, viz.: Diplococci, staphylococci and streptococci. In view of the action of these various micro-organisms, he divides diphtheria into three general classes:

(1) True, pure, or simple diphtheria.

(2) Pseudo or false diphtheria.

(3) Impure or complex diphtheria; or, as Chaillou and Martin have called it, "diphtheria with associations."

The second and third classes are further divided according to the complicating germ present into ten subdivisions. Although these complicating germs have a marked influence upon the prognosis the factor of greatest importance in regard to the mortality of the disease is the age of the patients.

The toxic influence of diphtheria is felt mainly through its action on the vaso-motor center with a consequent disturbance of certain vital functions; and so far as statistics and experience enable us to judge, the manifestations, considering them in the order of their occurrence, are represented by derangements of the following systems: Renal, lymphatic, cardiac, respiratory, and nervous. Important as has been the aid of the fascinating science of bacteriology in the detection of this as of many other diseases, there are still many other factors of practical importance which are not to be settled in the laboratory of the scientific investigator, but must depend for their solution on the clinical skill and common sense of the medical practitioner.—Archives of Pediatrics.

Alterations of the Urinary Stream.

Dr. Alexander Payer, of Zurich (Wien. Med. Presse), has made a study of the changes in the urinary stream.

Projective Force of the Stream.—A strikingly long stream is characteristic of a pathologically developed detrusor, due to hindrances to micturition in the urethral canal, such as follows moderate strictures, a narrow external orifice, or from spasm of the detrusor. Weakening of projective force of the current is, at a certain age, pathognomic of prostatic hypertrophy, and is seen in weakening of the detrusor from chronic inflammation of the mucous membrane and muscular tissue, from neglected gonorrhœa, in atony, from fatty degeneration of the muscular tissue, as in the course of acute infectious diseases, like typhoid fever or dysentery, and from voluntary retention of the urine where micturition is painful, as in stone in the bladder and fissures of the neck of the bladder. A decrease of force is observed in neurasthenics and in spinal diseases and tabes.

Decreased Caliber of the Stream.—Hypertrophy of the prostate, or stricture will diminish the caliber. In prostatics the current falls verticallly down, and in stricture as well, but in the former the force is not increased by pressing, while in the latter it is. Spasmodic contractions of the urethra from general diseases may also cause a diminution of the caliber.

Altered Form of the Stream.—A deviation from the round form is observed as the earliest sign of stricture. In decreased force of expulsion the form is changed. Change of form is not a certain sign of stricture.

Continuity of the Stream.—Sudden stopping of the stream is supposed to be pathognomic of stone, but it is rarely observed except in children. In adults, the stone must be very small and light. It is, relatively, frequently remarked in spasm of the sphincters in neurasthenics.

Starting the Stream, etc.—A drop-by-drop passage of the urine is characteristic of great stricture and great pressure. In some cases there follows a round and strong stream when it started drop by drop; spasm of sphincter.

Dripping of Urine.—Dripping of urine after passage of the stream is a frequent occurrence, and is of varying importance, according as it appears after voluntary urination—a short time after—or in the intervals. It is due to a relaxation of the muscular tissue of the urethra, and the urethra lying in a half-opened condition does not press the urine out over the bulbous portion, so that it accumulates and is suddenly ejected after urination, or it drips away slowly during walking. Narrow strictures also cause it, where the portion posterior to the stricture fills like a sack, and unless emptied by milking movements by the patient it drains away afterward. Abnormal narrowness of the orifice of very great phimosis are other causes. Involuntary urination may occur at any time, while dripping only follows urination.—Mass. Med. Jour.

Infective Jaundice.

Banti (Deut. Med. Woch.), relates a case of so-called simple jaundice, in which, in his opinion, the infective character of the disease was established. The patient, aged 22, presented the ordinary symptoms of slight jaundice, which lasted about a fortnight. The liver was enlarged, as also the spleen. The stools were always colored with bile pigment, so that there was no obstruction of the ducts. The temperature seems to have been raised, and there was frequent nose bleeding. The treatment was by naphthol and salol. While the disease was at its height 3 c. cm. of blood were withdrawn from the spleen with a sterilized syringe, and under the usual precautions. The author obtained from this blood a capsulated micro-organism in pure culture. It did not stain by Gram's method. It was pathogenic to white mice, and when injected into dogs, guinea-pigs, and rabbits it displayed marked pyogenic properties. It was most closely allied to two forms of proteus and to the bacillus of rhinoscleroma. The author does not think that the presence of the micro-organism in the spleen could have been due to a secondary infection. Many of the symptoms presented by the patient were in favor of an infective process, and the micro-organism present was closely allied to pathogenic forms found in man. The fact that it did not produce jaundice in animals does not, in the author's opinion, invalidate his conclusions. Some micro-organisms have a hæmatolytic action. It does not follow that every case of simple jaundice is due to the micro-organism. The author would divide jaundice into the toxic and infective varieties; the latter may own many causes. It remains to be shown how often the B, ictergenes capsulatus, causes jaundice.

The Treatment of Abortion.

Dr. Brooks H. Wells, in his paper read before the New York Academy of Medicine and published in the American Journal of Obstetrics, after speaking of abortion in a general way, says: A local examination is always imperatively necessary when any of the signs of impending abortion appear. Then if the symptoms are not marked, if the pains are slight and irregular, the bleeding moderate, the os not much dilated, and the cause one that can be remedied, as for instance, retroversion, we may hope by absolute rest in the recumbent position, by the administration of full doses of opium and viburnum by suppository, or morphia hypodermically, and by the reposition of the displaced uterus, to carry the patient through her period of danger and allow the gestation to continue. If the cramps are regular and well marked, the hemorrhage considerable, and particularly if the os be dilated, these hopes will not be realized; the loss of the ovum becomes inevitable, and it is our duty to hasten its expulsion. As the method of procedure now varies according to the period of gestation, we may draw a line of division at the end of the third month and consider the case as either "abortion" or "miscarriage."

Abortion.—As the uterus before the end of the third month is still comparatively small and will not allow the accumulation of any considerable amount of blood in its cavity, the use of the tampon is sometimes permissible before the expulsion of the fœtus, not so much to check flowing as to excite more vigorous expulsive contractions. When it is to be employed the patient is put in the dorsal position on a Kelly pad, the vagina and cervix thoroughly cleansed by a douche of hot soapsuds rubbed into all folds and crevices by the fingers and followed by irrigation with 1: 4000 warm bichloride solution. Then a strip of sterile iodoform gauze is carefully packed into the cervix and the vagina tamponed. The packing is removed in from eight to twelve hours, and afterward the ovum will be found loose in the vagina or in the dilated os. If at this time no portion of the ovum be expelled, that is, if its envelopes be still intact, the packing may be carefully repeated. If any portion of the ovum has been expelled, the remainder should be removed at once, either with the finger—which can seldom be used at this early period—with the ovum forceps, or with the dull curette. If there be reason to believe that the abortion has resulted from criminal interference, if the case has been allowed to run on for many days, if there be endometritis or any form of sepsis, the os should be dilated, preferably after the administration of an anæsthetic, the fragments of the ovum removed and the whole interior of the uterus scraped carefully and thoroughly with the sharp curette, washed clean with a watery solution of iodine (we would prefer a solution of creolin) and packed with a strip of sterile iodoform gauze. The gauze should be removed in twenty-four hours and the vagina irrigated. If septic symptoms continue the uterine cavity may be again irrigated with the iodine solution and a fresh strip of gauze carried to the fundus.

Miscarriage.—After the third month the use of the tampon for hemostatic or other purposes is reprehensible, as the uterus is then larger and dilatable, so that a dangerously large amount of blood may accumulate in its cavity. If the hemorrhage from a miscarriage is moderate, the treatment may be expectant for a limited time until the entire ovum or fœtus be expelled. If the fœtus alone be discharged, the remaining portion of the ovum should be immediately removed with the finger, aided, if necessary, by the ovum forceps or large curette. If the hemorrhage be profuse there should be no delay; the os should be dilated, and the uterus cleared at once. Where there is sepsis the indication is for the use of the sharp curette, irrigation and packing as already described. When we have legitimate reason for inducing abortion it is best done by immediate clearing out of the uterus after anæsthesia and rapid dilatation, the uterus being washed clean and a strip of gauze introduced for drainage. The author concludes as follows:

Recognizing that any interference with the uterine cavity must be looked upon as a possible source of infection, and must be made aseptically and with antiseptic precautions to be free from danger, he strongly urges that in every case where abortion or miscarriage begins acutely and from natural causes, the ovum be removed by the finger, ovum forceps or curette within twenty-four hours after the abortion be considered inevitable, if the entire ovum be not then already expelled, complete expulsion being indicated usually by cessation of pain and hemorrhage. In cases where a portion has been expelled, where we find serious hemorrhage, where the ovum is dead, where we have reason to suspect criminal interference, where there has been continual spotting, foul discharge, or fever, the uterus should be explored and emptied at once, as any delay greatly increases the risk of sepsis. The sharp irrigating curette, followed by gauze drainage, should always be used where there is septic material present or where the endometrium is diseased; in other conditions the finger or a dull instrument is sufficient.

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THERAPEUTICS.

The Indications and Contra-indications of Alcohol in Diabetic Subjects.

Dr. [illegible]. Hirschfeld, Privat-docent of Internal Medicine at the Medical Faculty of Berlin, has recently investigated the influence of alcoholic beverages on the organic exchanges in diabetes mellitus. The patients subjected to these experiments took from 60 to 70 grammes of alcohol daily in tea or aërated water. Their urine and fæces were carefully analyzed, in order to determine as exactly as possible the effect of the alcohol on the various nutritive processes.

These researches showed that alcohol, when absorbed in moderate quantities, is completely burned in the organism of a diabetic subject and is likely to improve the general nutrition of the patient, principally by favoring the absorption of fatty substances. The polyuria, glycosuria and acetonuria are not in the least increased; but when the patient is affected with cardio-vascular sclerosis, alcohol may exert a deleterious influence on the heart and vessels. Lastly, in cases of diabetes with considerable albuminuria, alcohol may do harm on account of its irritating actions on the kidneys.

The conclusion which appears to be justified by these results is, that alcohol is only indicated in cases of grave glycosuria. It is, therefore, well to abstain from its use in the case of stout diabetic patients who complain of general debility, drowsiness and abnormal sensations in the extremities, presenting only a moderate degree of polyphagia and polydipsia, while the glycosuria quickly subsides on suppresion of carbohydrates in their food, and who under the influence of a restricted antidiabetic diet pass in the twenty-four hours about two litres of urine, containig $\frac{1}{2}$ per cent. of sugar. Whenever the greater part of carbohydrated food is burned and utilized by the organism, there is obviously no need of stimulating the exchanges by the use of alcohol. If, however, the patient is in the habit of consuming alcoholic beverages and finds it difficult to do without them, if the heart and arteries are in good condition and there is no albuminuria, he may be permitted to drink from $\frac{1}{5}$ to $\frac{2}{5}$ litre of claret daily; but if he suffers from cardiovascular sclerosis, or if he presents albuminuria which markedly increases under the influence of alcohol, its use in any form must be strictly forbidden.

The conditions are entirely different, however, in grave cases of glycosuria, when the patient is greatly emaciated and eliminates sugar even if abstaining from the ingestion of carbohydrates, constituting the condition known as "autophagia," that is to say, the patient lives at the expense of his own tissues, especially the fats. In order to prevent, on one hand, the rapid evolution of a pulmonary affection, which is of frequent occurrence in such patients, and, on the other hand, to avert diabetic coma, it is advisable to provide for the nutrition of the patient by furnishing him with the largest possible amount of fatty substances, preferably in the form of butter of good quality. To facilitate the absorption of such food and to prevent dyspepsia, which might easily result from the use of food too rich in fat it is necessary to order the ingestion of from 60 to 70 grammes of alcohol daily, either in the form of brandy or rum added to the liquids taken by the patient, or by the consumption of a bottle of generous claret each day. In addition to its favorable influence on digestion, the alcohol, in such cases, has also the effect of economizing, by its intra-organic combustion, the destruction of fat entering into the composition of the tissues.

The existence of vascular sclerosis or moderate albuminuria, increasing under the influence of alcoholic beverages, does not, in such cases, constitute a contra-indication to the use of alcohol, inasmuch as it is absolutely necessary by treatment to prevent at any cost the wasting of the patient, who otherwise would be doomed to certain and speedy death. —Med. Week.

A CASE OF TRAUMATIC TETANUS WHICH RECOVERED UNDER ANTITOXIN INJECTIONS.

By HERBERT L. EVANS, M.B., C.M. Edin.
Goring-on-Thames, near Reading.

The following notes may be interesting to your readers:

W. S. (a boy, aged 13 years and 11 months) of this village fell on Friday, June 8th, cutting his right knee on the road, and leaving some of the road dust embedded in the wound. He was away from home at the time but returned to his father on June 26th.

On July 16th he began to experience "stiffness in the back and pain between the shoulders." On the following day the pains were worse, and there was some difficulty in mastication.

On July 22nd the pains were worse and more frequent; the "head was quite drawn back." He cried loudly during the spasms, and was obliged to kneel so as to rest his head against some object.

When seen on July 23rd he complained of pain between the shoulders, which had not been relieved by rubbing; he had a difficulty in sitting up and turning to the light; he felt sick but had not been so; he could not open the teeth one inch, and the jaws closed on attempting to protrude the tongue; the bowels were opened by calomel, the abdomen thereafter being far less tense. The same evening the patient was put under chloroform, and the supposed focus of infection scraped and kept under a compress of solution of perchloride of mercury. The wound was freely excised, a light wet dressing being put on; chloral and bromides were given. Slight improvement seemed to have taken place by next day, but on July 25th his condition was worse. Plugs of cotton wool were placed in the ears, as sounds caused spasms. Opisthotonos was well marked.

During July 26th spasms occurred about every quarter of an hour. Chloroform was given and twelve mxx injections of Tizzoni's tetanus antitoxin were introduced under the skin of the abdomen and inside of the thighs with antiseptic precautions. The injections were made soon after 7 P. M., the temperature being then 99.8°; by 9 P. M. it had fallen to 98.4°. He was ordered nepenthe mvij, acid. hydrobrom. dil. mx, every four hours if in pain.

On July 27th the temperature was 98°. He had had three spasms, but less severe; he could open his mouth better and the head was less drawn back.

Up till July 30th the spasms since the injection had caused little trouble. He seemed bright and hopeful. Towards midday slight spasms, "little niggling pains," were said to occur every five minutes, but he had not been kept sufficiently quiet.

Three injections of a fresh solution were made under cocaine in each arm, the temperature apparently falling to 96.6°. From this time he had no return of the spasms, and general improvement took place. His appetite was enormous. The tongue was protruded with greater ease; the tendons at the back of the knee were less tense; the head could be slightly raised from the pillow. He asked to be allowed to get up and walk.

The improvement continued, but with a view to hastening the cure two more injections of a strong solution were given on August 9th. On August 11th the patient got up and walked downstairs, and on August 12th he was taken out in a bath chair.

The mouth could be opened, apparently to its full extent, on August 15th; voice and mastication were normal; the knee-jerk was now normal; a few days after the first injection this was found to be absent.

The injection used was Tizzoni's antitoxin, supplied with great promptness by Messrs. Allen and Hanburys. A hypodermic syringe by Arnold of a very simple type was employed. The dried serum proved very difficult to dissolve in cold distilled water, and the solution was far weaker than that advised. In all, but more than half the total quantity supplied—4½ grammes—was used.—Brit Med. Jour.

The Treatment of Bleeding from the Nose.

The Revue Internationale de Rhinologie Otologie et Laryngologie, publishes an article by Dr. Baumgarten, of Budapest, in which he recommends the following methods in the treatment of epistaxis: A thorough examination of the inside of the nose must be made in order to discover where the bleeding comes from. Usually there are to be seen at the anterior part of the septum, rarely elsewhere, one or more small superficial vessels of a red color, or else little nodules, erosions, and varicose veins, or a small empty vessel looking blackish on a red background. Occasionally the hemorrhagic spot is covered with fresh blood-crusts which must be softened and carefully raised in order to expose the appearances referred to. If there is nothing of a suspicious nature to be seen, the patient must be made to blow his nose several times. Another method is to apply a tampon of wet cotton to the septum, and press it more and more firmly against the place until the morbid spot bleeds. Sometimes this brings on at once a more abundant hemorrhage, which makes the continued application of the tampon necessary before the bleeding spot can be destroyed. For this destruction the author has used the galvanic cautery or chromic acid, sometimes both. He touches the spot with the cautery, which is very painful, and the wire loop can not always be withdrawn while it is still red, so that the eschar is apt to be removed at the same time. Then the small wound bleeds feebly, and it should be cauterized with chromic acid, which according to Dr. Bresgen, is an excellent hemostatic. When operating on children or on timid persons Dr. Baumgarten uses the chromic acid only, but the cauterizations must be repeated two or more times after the eschar has fallen or after a fresh hemorrhage. This treatment must be continued until a plainly visible cicatrix is produced. The patient must be told not to scratch the eschar, to apply a little oil or grease to the spot, to keep quiet, to avoid handling his nose, and not to blow it too hard.

Sometimes sneezing occurs, and this may bring on a hemorrhage through the eschar. In this case the application must be renewed. A hemorrhage must always be arrested before cauterizing the spot from which it proceeds. After the source of the hemorrhage has been ascertained the spot is washed with warm water, the nostril is dilated, and as large a tampon as possible is inserted, against which the wing of the nostril is pressed with the finger. That generally suffices, as nearly all forms of epistaxis have their origin in the forepart of the nasal passages, but the patient must hold himself erect and remain quiet. After this pressure has been continued for a moment the tampon is slowly withdrawn in order to find the origin of the hemorrhage. A second tampon is then pressed against the spot. The epistaxis is thus often arrested. Afterward the place may be cauterized with chromic acid. The author has often succeeded in covering the bloody points with a layer of chromic acid by pushing the tampon forward very gently; it can not always be removed immediately, because the wound will bleed anew, and it must be left until the following day, or longer if necessary. The author, however, has never had to repeat this for more than three days. He always uses cotton saturated with carbolic acid or some other aseptic cotton, but never iron perchloride, as that only cauterizes.

If the blood runs through the tampon or into the pharynx, the physician should use the same means as those employed in the more serious hemorrhages. After the part has been washed with warm water, a strip of iodoform gauze as wide as a finger should be pushed as far as the choana; then the entire nasal fossa should be packed with the same material. This may be done easily and without pain; it is better than Bellocq's method, and may be accomplished even with a contracted nostril. With regard to Bellocq's method, Dr. Baumgarten thinks it is not sufficient, and that it may produce accidents to the ear, etc. In one case, that of an old man who was the subject of advanced arteriosclerosis, Bellocq's tampon was inserted, and several tampons were added anteriorly. Two physicians had tried to stop the bleeding, but their efforts had been of no avail. The velum of the palate had been cut, and it was ulcerated and œdematous. The author, who was called in, immediately removed everything, and while the bleeding continued he applied strips of iodoform gauze, and two days afterward the hemorrhage was arrested.

As a palliative method, or in cases where the anterior tampon is not efficacious, or where the patient is taking care of himself pending the physican's arrival, the author recommends the use of warm water, which is a better hemostatic than cold water or ice water, or else lemon juice. A solution of iron perchloride is an excellent hemostatic, he says, but it cauterizes the neighboring region and prevents the physician from distinguishing the diseased spot.

When the hemorrhage finally stops, and the bleeding points are found, they must be cauterized. There is no harm in cauterizing somewhat around the bleeding spot; on the contrary, the indications are to burn the entire vicinity. In cases of arteriosclerosis the author has been obliged to cauterize the entire pituitary surface as far as the choana, as the iodoformed strips were removed one after another. These cauterizations should be repeated several times, and every suspected place covered anew with chromic acid. These tampons of iodoform gauze are not disagreeable to the patient, and they may be left for two days. Before removing them the nose should be washed with warm water, and the strips of gauze should be drawn away very gently in order to prevent the hemorrhage from breaking out again, and any suspected places immediately cauterized, even at the risk of touching a healthy spot. The patient may take wine and iron, but should avoid coffee, tea, and effervescing drinks. All internal medicines are useless and harmful.—N. Y. Med. Jour.

The Treatment of Sprained Ankle.

The New York Medical Journal contains an article by Dr. V. P. Gibney, entitled "A New Treatment for Sprained Ankle, Involving No Loss of Time, Requiring No Crutches, and Not Attended with Any Ultimate Impairment of Function." The method which it is stated originated with Dr. Wm. R. Davis, U. S. A., consists in the application of strips of rubber plaster to injured part, in the following manner: For a sprain above the external malleolus, a strip of rubber plaster about twelve inches in length is applied, beginning at the outer border of the foot, near the little toe, and extending to the inner side of the foot, above its middle, just above the plantar arch. The second strip is applied vertically, and passes from the junction of the middle, with the lower third of the leg down alongside of the Tendo Achilles, over the heel, and terminating at a point just above the internal malleolus; but posterior to this, other strips are applied in the same way, one overlapping the other about one-half, until the whole external malleolus and side of the foot up to the middle third of the leg is covered. It is well to reinforce just above the malleolus, by strips passing criss-cross, for additional support. The strips should well overlap each other, especially over the tendon Achilles and heel. The ankle should not be completely encircled, so as to avoid constriction. When the sprain involves the tarsal or meta-tarsal joint and the whole foot is œdematous, the strips are applied as follows: The first one is placed on the inner side of the heel, passes back to the heel below the external malleolus, over the dorsum of the foot, and terminates just under the ball of the great toe. The second is started under the external malleolus, passes over the back of the heel, over the foot, and terminates under the outer side of the foot, near the small toe. Sometimes extra strips are also applied up and down the tendon Achilles, the ends terminating on the sole of the foot. Over the ankle thus strapped a cheese cloth bandage is simply applied, up to the middle third of the leg.

In cases when the toes are much swollen and when the whole ankle must be strapped, and when it is impossible to leave any space uncovered, every toe should be strapped separate before the ankle dressings are applied. This is to insure additional comfort and to avoid swelling of the toes.

Before the plasters are applied it is good practice to elevate the foot for a few hours, and employ immediate massage for a few moments; then apply a roller bandage while the plasters are being prepared.

Dr. Gibney reports eight cases where this treatment was employed with success, the patients being allowed to walk on the injured limb.—N. Y. Med. Times.

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PROCEEDINGS OF SOCIETIES.

SEVENTH ANNUAL MEETING.

The Tri-State Medical Society of Alabama, Georgia and Tennessee.

R. M. Cunningham, of Birmingham, Ala., presiding.

Opened with prayer by Rev. J. W. Bachman.

The secretary and treasurer presented their reports, which were referred.

The president then delivered his annual address on the subject of

TUBERCULOSIS,

which was based on his experience in the prisons of Alabama. The statistics showed a great predisposition on the part of the negro to tuberculosis, which he explained as follows:

1st. The negro has acquired since his emancipation a predisposition to tuberculosis which is hereditary.

2d. A greater liability to diseases which predispose to tuberculosis, especially bronchial catarrh, intestinal catarrh and pleurisy.

3d. He is physically, mentally and morally inferior to the white man, therefore:

4th. He is more liable to contract disease, particularly tuberculosis and thoracic diseases (local and from infection) generally.

5th. His changed social, religious, political and industrial relations involving as a rule a change from the segregate to the aggregate, from country to town and from farm to public works.

6th. His disregard of all rules of sanitation.

In two prisons a mile apart, under the same management and sanitary conditions, there were at No. 1, 45 deaths from tuberculosis to 26 at No. 2, explained by the fact that there was an epidemic of diarrhœa at No. 1, proving that intestinal catarrh predisposes to tuberculosis of the peritoneal form. The excess of mortality, 19 being exactly the number which died from tubercular peritonitis at No. 1. An epidemic of diarrhœa was always followed by a large number of cases of tubercular peritonitis.

The causes he defined to be: 1st. The essential, the tubercle bacillus. 2d. The predisposing, (a) an inherited predisposition, (b) an acquired constitutional or local predisposition. The predisposing never alone producing the disease, the essential rarely primarily, it is the result of hetero-inoculation and as a rule it is a local infection producing chronic local changes, the general and acute forms being due to auto-infection.

In general acute miliary tuberculosis the lungs, peritoneum, spleen, sometimes the liver, rarely the kidneys, were involved, the patient dying before the caseous stage set in. These cases followed pleurisy, often notably after a large amount of fluid had been withdrawn, and from tubercular glands. In the general form the process involves the same organs, but the infection is not so general and the caseous stage is often reached and local inflammatory lesions generally found. In both there may be an active tubercular inflammation developed in some organ terminating rapidly. The bacilli were distributed by the circulation.

The acute forms are the result of auto-infection, generally from a chronic tuberculosis which may not even have been suspected. The acute forms were rare. The bone rarely affected. The one most frequently involved being the sternum.

H. Berlin thought the reason the disease prevailed so largely was: 1st, because while the prisons were apparently clean they contained disease germs; 2d, the convicts were in a weakened condition, but, 3d, and most important, was the dust from the mines which they inhaled and which under the microscope shows sharp edges which cut the delicate lung tissue and admit the bacilli.

C. Holtzclaw had noticed the frequency of tuberculosis in the county institutions. While the left lung was first affected in the white it was the right in the negro. The greater liability of the negro to the disease was due to the fact that the whites had acquired an immunity by long contact.

J. B. Murfree could not endorse the idea that diarrhœa had anything to do with the production of the disease except as it weakened the patient. While that bacillus producd the disease an equally important factor was the predisposition.

J. B. Cowan thought that we could lift up the vital energy and put the functional activity in such a condition as to resist the disease.

G. A. Baxer differed from Dr. Murfree in regard to diarrhœa as a factor in producing the disease. It acts by providing an entrance for the bacilli through abrasions of the intestines. One agent the writer did not mention was the food and especially milk. In China, where tuberculosis is unknown, it is attributed to the non-use of milk. He had frequently seen tuberculosis of the bones and in the glands of the neck. He could see no objection to the removal of the latter. An imperfect removal might result in general infection, but two of three could be thoroughly removed.

P. L. Brouillette regretted that the author had not used the microscope as many cases of tuberculosis were difficult of diagnosis.

Dr. Cunningham closed the discussion by saying that dust produced a fibroid phthisis which was not tuberculosis but predisposed to it. He did not find typical tuberculosis in the negro. Believes he is acquiring a predisposition to the disease. Both lungs were affected as a rule.

The diarrhœa predisposes to the disease by abrading the membrane and giving entrance to the germs. The weakness of the paper was that the microscope was not used but the clinical history and the gross lesions post mortem were enough to complete the diagnosis.

G. Manning Ellis read a paper entitled:

PSEUDO-HYPERTROPHIC MUSCULAR PARALYSIS.

and exhibited a patient, a boy, who gave the history characteristic of the disorder. He was late in beginning to walk. The muscles seemed large. The gait was oscillating. While apparently healthy and well developed he seemed weak. The difficulty in locomotion increased. The characteristic symptoms were shown: The peculiar gait, the manner of rising by placing the hands on the knees and climbing up the thighs, the lordosis, absence of tendon reflex and diminution of the muscles of the leg which comes after the enlargement. The upper extremities showed the enlarged infra spinatus and decrease of the latissimus dorsi, producing an absence of the auxiliary fold.

Willis F. Westmoreland asked if there were an adherent prepuce. The reply was that there was not. He reported two cases with adherent prepuce; an operation in one in a late stage gave no benefit. He thought if there was irritation from this cause an operation before the disease began would be of benefit.

RECEPTION.

A reception was tendered the society by Dr. and Mrs. R. P. Johnson at the Southern Sanitarium at 8:00 p. m.

SECOND DAY.

J. B. Murfree of Murfreesboro, Tenn., read a paper on:

THE PLACENTA; HOW AND WHEN DELIVERED.

He maintained that as soon as the child is born Credé's method should be employed. If the placenta does not come away in 20 minutes gentle traction should be made on the cord. Undue force should not be used. If this does not succeed and especially if the placenta presents centrally the hand should be introducd into the uterus and the edge freed from its attachements. If the placenta was delivered as soon as the child was born it would leave the mouths of the vessels open. Exactly when to deliver cannot be definitely stated in every case; most practitioners wait too long.

R. R. Kime does not agree with the author in advising introduction of hand into uterus to remove placenta until other means have been tried; first prefers wrapping cord around first two fingers of right hand and following up to placenta, then by pressure on placenta and gentle traction on cord it will usually slip out. Objects to ergot in obstetric cases.

W. G. Bogart delivers the placenta as soon as he ties the cord, gives the child to the nurse and prepares his hands, which takes about twenty minutes. He grasps the fundus and squeezes placenta out if possible; if not successful he introduces two fingers into the uterus and grasping the edge of the placenta makes a rotary motion with the other hand still on the fundus. Never makes traction on the cord, which he deems dangerous. Ergot should not be given to expel the placenta. The important point is to get it all away. Has no fear of the hand in the uterine cavity if it is thoroughly clean, nor does he deem it necessary for this reason to use the intra uterine douche.

Preston Scott thought that we were too hasty to get rid of the placenta. Time should be given for tonic contraction. Gentle traction should be made on the twisted body of the placenta. Had excluded ergot from his practice entirely. Used the hot water douche to promote contraction.

J. P. Stewart waits longer than twenty minutes, an hour if necessary, if there was no hemorrhage. If the placenta was in the vagina delivers at once, and it acts as a foreign body, causing contraction and tearing the membranes.

J. B. Cowan thought there was a happy medium between 20 minutes and an hour. He assists nature during the pains. If necessary puts his hand into the uterus. Postpartum hemorrhage can be prevented by steady pressure on the fundus of the uterus kept up for an hour if necessary. Never pulls the cord.

Dr. Murfree closed by saying that ergot was liable to produce hourglass contraction. There can be no harm in introducing the hand into the uterus properly.

E. H. Shell of Birmingham read a paper entitled

REFLECT,

reporting cases which were not relieved because not properly investigated by means within the reach of every practitioner. A case treated for liver disease was relieved by a course suggested by an examination of the urine, one diagnosed as consumption responded to a similar course, one of headache was found to be due to diabetes. The urine had not been examined in these cases. Doctors should study their cases more.

J. B. Cowan found fault with modern education, which was a process of cramming and did not develop the thinking powers. The lesson of the paper was that we should think more.

W. F. Westmoreland thought that the modern medical school taught that every case should be examined as well as if for life insurance. The day when albumen could be seen by looking into the bottle was past.

No college of any pretension did not teach examination of urine and the use of the microscope. The modern student was better equipped than those of the past.

J. B. Murfree thought that the point of the paper was that we did not take time to think, the facts were not properly put together.

Preston Scott was surprised that in cases seen in consultation no examination of the urine had been made and the cases not properly studied.

W. C. Townes asked what the writer meant by a rigid diet.

Dr. Sholl said that he meant the exclusion of all starchy foods, the use of meats, milk, oysters, cheese, turnips, greens, celery and such articles.

Willis F. Westmoreland, of Atlanta, read a paper entitled:

REPORT OF CASES (a) TRACHEOTOMY FOR FOREIGN BODIES; (b) CYSTOTOMY FOR STONE.

He reported 27 successful operations for foreign bodies. In all the first ring of the trachea was cut and the opening enlarged down as necessary: Operated as early as possible. The external incision was made large. Muscles were separated, the fascia divided, vessels ligated so that no forceps were in the road. If necessary the isthmus of the thyroid was divided and tied. No tenaculum was used in the trachea. Instead of trachea forceps the incision was held open with silk introduced with a needle having no cutting edge. The foreign body was not probed for. If it was not coughed out the wound was left open in one case (cockle bur) for three days. The mucous will sometimes prevent closure of the wound. In closing the tissue under, the mucous membrane is brought together with silk using a needle having no cutting edge and the Halsted or mattress suture. Thus layer after layer is brought together.

In cystotomy for stone he avoids rectal dilatation. Hydrostatic pressure is used to distend the bladder raising the water 2 feet. This causes the bladder to bulge through the opening. No tenaculum is used to steady the bladder but it is held with two artery forceps between which the incision is made as high as possible. After removing the stone and flushing the bladder the opening is closed with the Halsted suture and the closure tested by raising the water for 3 feet for an instant.

G. A. Baxter endorsed the position of the writer but was attached to the medio-lateral operation. Stone is rare in this section, there not having been a dozen operations in the last 15 years. The trouble is more frequent in middle Tennessee.

J. A. Goggans related a case where the larynx was almost occluded at the site of the thyroid cartilage by a new growth so that he had to operate readily to save the patient. Throwing the head back increased the difficulty of breathing and it had to be held forward, and the larynx steadied with the tenaculum. He said that suprapubic cystotomy was the operation par excellence for stone. He was prejudiced against the low operation, as he was once called on to sew up a large fistulous tract between the rectum and the bladder, in a case sent him. He had attempted to sew up the opening with silk-worm gut, operating through the rectum. At the third operation had divided the sphincter ani muscle and almost closed the tear.

W. E. B. Davis said that he was glad that both operations were fairly considered. The results of the older surgeons who performed the low operation were good. He found the statistics of the suprapubic operation were bad because bad cases were selected for the operation. A distinguished surgeon had so operated in a bad case to save his statistics for the low operation. This shows how statistics can be doctored. He thought it well to leave the wound open for drainage, for there is always disease of the bladder, and we may have a new stone in a few weeks.

R. J. Trippe said that his experience was limited to a few cases operated on for disease, and advocated leaving the wound open for drainage. As a guide he used a sound. Did not fill the bladder with water, but washed it out before operation. In tracheotomy he used long scissors forceps and did not stop to ligate vessels. These held the wound open and saved an assistant.

In closing the discussion Dr. Westmoreland said that time was an important item in tracheotomy, but we always have two minutes after the patient quits breathing, as he can be resuscitated after that time. He advocated cutting high in suprapubic cystotomy as the bladder was near the surface, being quite deep at the pubis. The tenaculum was avoided, as the urine might be voided through the opening. The buried silver wire was used owing to the fact that it took several weeks for muscular tissue to unite, and no other suture would last that long. According to Gregg-Smith, without this suture, twenty per cent. of laparotomies were followed by hernia. It would make no difference if the peritoneum was cut in the high operation. In these cases the wound was not left open, as they were not cases of disease.

J. A. Goggans of Alexander City, Ala., read a paper entitled:

EARLY DIAGNOSIS AND VAGINAL HYSTERECTOMY IN CANCER OF THE UTERUS,

dwelling on the importance of prophylaxis, early diagnosis, and early treatment by vaginal hysterectomy.

A. R. Robinson of New York, read a paper on the Treatment of Malignant Cutaneous Epitheliomata (Cancers).

In cases where the diagnosis is not positive, iodides and mercury should be used. The elements extend much further than is generally supposed, when they are excised, pathological cells are left, and we have so-called recurrence, which is really a re-appearance when the wound has been treated antiseptically. Suppuration should be encouraged, as the toxine of pus is more destructive of the epithelioma cells, than the erysipelas toxine. He opposed cutting and advocated the use of caustics.

The toxines had cured no cases, some may have been benefited. The caustic should destroy the tissue quickly and thoroughly. Mild caustics as nitrate of silver should not be used.

Caustic potash liquefies the tissue as much as would be removed with the knife. Beyond this there is an inflammatory exudation which destroys the pathological elements. The cancer cells may extend deeper than could be reached with the knife; here the potash is preferable. There is less deformity than with the knife, more than with arsenious acid.

Chloride of zinc acts more slowly, suitable only in certain locations, as near the eye; also in the papillary form previous to the use of arsenious acid. Pain may be avoided by mixing it in a 20 per cent. solution of cocaine.

Arsenious acid has a more elective action on the cancer cells, and should, as a rule, be used weaker than in Marsden's paste (two parts to one of gum arabic). It may be used three to two, or equal parts. This will not attack normal tissue in twenty hours. It should be removed in that time, and if there is not enough necrosis, re-applied for sixteen to eighteen hours. Cases should be watched for a year or two, as there may be a re-appearance. Arsenious acid may be applied to the lips, if care is taken to prevent getting it into the mouth, but on the nose, it is especially valuable on account of deformity.

These paper were discussed together.

R. R. Kime said that it was unfortunate that cancer of the uterus was not diagnosed early. Often the symptoms are not well defined and are very insidious, not being detected until the disease has so far advanced as to preclude operation. It was not possible to get women to submit to repeated examinations as was suggested by some gynecologists. Every physician should insist on proper examinations of all women near the menopause, that present symptoms of cancerous disease.

W. E. B. Davis thought that these cases were overlooked as they were so insidious in their development. Every case of diseased cervix should be treated and cured. He advised removal of the uterus and appendages for cancer.

P. L. Brouillette asked as to the danger of systemic effect from arsenious acid.

Dr. Goggans said that wherever there was cancer there had been irritation; hence the necessity of removing every source of irritation and every pathological condition as prophylactic.

Dr. Robinson had applied arsenious acid on a surface as large as the hand and had seen no systemic effect. Marsden advised not over an inch square. If seen early, caustics are all that is necessary in cancer of the skin.

J. P. Stewart of Attalla, Ala., read a paper on "Hemorrhoids," in which he dwelt on the necessity of an examination and under chloroform if necessary. Where tumors are small he used a solution of red gum as an injection in the rectum, if larger they are destroyed with the clamp and cautery.

R. P. Johnson had treated cases successfully with injections of carbolic acid 2 parts to 1 of olive oil to which was added $\frac{1}{4}$ grain of morphine to each injection.

J. V. Cowan alluded to the new operation of excising all the hemorrhoidal tissue. These cases often fall into the hands of empirics who inject carbolic acid and give temporary relief. He likes the old method of tying the tumors. In a bad case where there was no disinct tumor he caught up the tissue with a tenaculum and thus tied it putting in 14 ligatures. The result was perfect.

R. R. Kime said that many hemorrhoids can be dissected out entire and wound closed by over and over suture with excellent results, leaving no raw surface to granulate. Where blood supply is marked they will require ligature at base. Has devised a speculum by which rectum can be ballooned in knee chest, position same as vagina in gynecological work.

G. A. Baxter insisted on varying the treatment according to the case. Carbolic acid he always considered dangerous. Could not examine without paralyzing sphincter. Was always able to find a distinct tumor.

R. P. Johnson said that the tumors were destroyed if the solution was strong enough and they were completely filled.

(To be concluded in the April number.)

MEDICAL NEWS AND NOTES.

The British Medical Journal, in a recent issue, points out that the new French cabinet includes two members of the medical profession, Dr. Chautemps, Minister for the Colonies, and Dr. Gadad, Minister of Agriculture. The Journal further states that there were also two members of the medical profession in M. Dupuy's cabinet, namely, Drs. Lourties and Viger. In the United States we recall but a single instance of a medical man serving as a cabinet officer, that of Dr. Oliver Wolcott, of Connecticut, who was appointed Secretary of the Treasury next succeeding Alexander Hamilton, February 3, 1795, General Washington then being President. President Jefferson continued Dr. Wolcott in office, and he held it until May, 1800. It is thus seen that, unlike some of his successors, the Father of His Country had no objection to placing important public interests in the hands of a medical man, although it is only fair to mention that our Dr. Wolcott had served with great distinction in the War of the Revolution and rose to the rank of brigadier-general.—Jour. Amer. Med. Assoc.

Surgeon-General James B. Tryon, of the Navy, has been elected a member of the Red Cross Society of Venezuela. He has also been awarded the bronze medal of that Society in recognition of the services he rendered the wounded at La Guayra during the revolution of 1892, when Dr. Tryon was attached to the flagship Chicago.

That habitual cycling will sooner or later, like any other occupation, prove to cause certain characteristics more or less pathological conditions, must, of course, be expected; but the same thing may be said of the majority of muscular exercises, occupations or social pleasures. But, as already stated, the main objection to bicycling is the natural inclination in this form of exercise of trying to pass all objects on the road, thereby often unconsciously, increasing the speed to an injurious extent, and this tendency is probably more characteristic of cycling than of any other occupation or amusement. Hence the reported sudden deaths. There is a peculiar exhilaration produced by most forms of muscular exercise and this exhilaration is also experienced by bicyclists after riding some distance and the exuberant spirit thereby produced is said to incite to increased velocity and racing, and, as a consequence, the rider over-exerts himself. Of course, after the muscles have become trained and hypertrophied after habitual cycling, even an intense speed may have comparatively little, or no immediate injurious effect. Such exercise, when indulged in habitually, would have a similar effect as the habitual muscular exertions of acrobats who, as a rule, break down suddenly when they retire in later life.—Med. Review.

At the annual meeting of the New York County Medical Association, the following officers were elected: President, Dr. Joseph E. Janvrin; vice-president, Dr. Herman J. Boldt; recording secretary, Dr. P. Brynberg Porter; corresponding and statistical secretary, Dr. Nathan Gross Bozeman; treasurer, Dr. John H. Hinton; member of the executive committee (for four years), Dr. John Shrady.

Medical Legislation in Kansas.—The Kansas Medical Practice Bill was defeated chiefly through the influence of the Populists. In the House, according to the Kansas Medical Journal, Mr. Winters, a Populist member, said: "We Western people can't support your plug-hat doctors. We've got a lot of old women who are better than any of them." Kansas is certainly a most fortunate State, if its laws are to be made for it by legislators who are swayed by such arguments as that. The logic of Populism as applied to medicine is certainly consistent with that by which it settles financial and other questions.—Boston Medical and Surgical Journal.

Frog-Skin Grafting.—To hasten recovery in a case of extensive burns of the face, neck and trunk, in a boy five years old, Dr. Smith covered the granulating surface with grafts of frog-skin. Small pieces each a quarter of an inch square, were placed in rows, each separated from the other by a space of half an inch; and this was repeated until, after the lapse of seven weeks, the whole surface was covered. The treatment was repeated daily, from twenty to eighty frog-grafts and a smaller number of human grafts being used on each occasion. The dressing consisted of borated vaseline, spread upon strips of compressed cloth, over which were placed sterilized gauze and a rubber bandage. In all nearly one thousand frog-grafts and four hundred human grafts were used.—Boston Med. and Surg. Jour.

Result of a Hoffa Operation.—Hoffa (Verhand. d. deutsch. Gesellsch. f. Chir., XXIII, Congress 1894) showed a specimen obtained from a three-year-old child who died of diphtheria after complete recovery from his operation for congenital dislocation of the hip. The pelvis showed that a good joint had been formed. The new acetabulum, which at the time of the operation was soft and spongy bone, was found to be covered with a complete layer of hyaline cartilage.—Am. Medico.. Surg. Bulletin.

MISCELLANEOUS.

The Treatment of Hemorrhoids.

Dr. Claude A. Dundore has an interesting article on the treatment of hemorrhoids in Mathew's Quarterly in which he presents the following conclusions, based upon a large correspondence with American surgeons:

1. The legature is the safest method, as there is less likelihood of its use being followed by hemorrhage, strictures, or ulcers.

2. The clamp and cautery causes less pain and a shorter convalescence, but hemorrhage and stricture of the rectum may very often follow its improper application.

3. Whitehead's method should be limited to those cases in which the entire circumference of the anus is involved. In ordinary cases of one or more hemorrhoids it should never be used.

4. Simple dilatation of the sphincter, injection of carbolic acid and Manley's method are merely palliatives.

The Treatment of Elbow-Joint Fractures in the Position of Acute Flexion Without Splints.

Smith (Boston Med. and Surg. Jour.) from the evidence of experimental fractures, and the results of clinical experience, arrives at the following conclusions in regard to fractures in this situation:

1. All fractures of the lower end of the humerus, once in position, are held in place if the forearm is kept acutely flexed.

2. Such flexion can be used without danger to the limb or undue distress to the patient.

3. The only force required being one of flexion, no rigid apparatus is needed, it being sufficient to strap the forearm to the arm. One of the strong points of this treatment, therefore, is its perfect simplicity.

4. The points to emphasize are: Be sure to replace fragments as flexion is made, taking great care that the internal condyle is as low as possible and the joint not widened by effusion between fragments. If the condyle is kept down no gun-stock deformity can occur.

5. In the cases thus far treated the amount of motion gained has been slightly greater than after ordinary methods. The amount of deformity has been very much less.

REVIEWS.

The Functional Examination of the Eye. By J. Herbert Claiborne, Jr. M. D. Adjunct Professor of Ophthalmology in the N. Y. Polyclinic: Instructor in Ophthalmology, College of Physicians and Surgeons, N. Y.; Assistant Surgeon to the New Amsterdam Eye and Ear Hospital; Author of "Theory and Practice of the Ophthalmoscope." 100 pages with 21 illustrations.

This book consists of a number of lectures delivered at the N. Y. Polyclinic during the last eight years and more particularly of a number of lectures or lessons in a practical course delivered to the graduating classes at the College of Physicians and Surgeons, New York.

The author's purpose is to make the subject of fitting glasses clear to any one who reads the book. He makes no claim for originality but trusts he has put the matter, ordinarily unattractive, in an attractive form.

The book contains a chapter on Refraction in general, and the nature and structure of spherical and cylindrical lenses.

Finally a chapter on Mydriatics has been added in which formulæ are given and suggestions as to the cases in which they are indicated together with directions for their use. Price, one dollar, The Edwards & Docker Company, 518 & 520 Minor street, Philadelphia.

Such is the announcement of a delightfully clear and practical statement of a subject that is often but sparingly taught and scantily learned. Dr. Claiborne has been a teacher for a number of years, and what he has to say is so stated as to be easy of apprehension as well as of practical application. He knows from a not inconsiderable experience what are the needs of the average man who has eye work of this kind to do as a necessity of his regular practice; and this does not by any means negative the idea that the book is also of real benefit to those who make the eye a specialty. The ability to impart knowledge is not even secondary to the possession of it; and too frequently we are deluged with books which serve no other purpose than to demonstrate the extent of information and the library possibilities of the author without giving even everyday facts in a way that can be utilized for the patients' welfare; but in the present brochure, clearness, conciseness, and a capacity to present the matter in a way that is available for everyday use, give the work a worth that must insure to it a large circulation, as well as reflect credit upon its author.

History of Anæsthesia, or Painless Surgery by W. R. Hayden, M. D. Published by International Journal of Surgery Co., 106-108 Fulton street, New York.

The writer has herein collected a series of papers that have already appeared in print in support of the claims of Dr. Morton as the founder of anæsthesia, and at the same time endeavors to do justice to the others who have been credited with the same. There is throughout a vein of earnestness that is not unfrequently marred by bitterness towards others. To us it has seemed that to the man who demonstrates and publishes the practicability of a thing belongs properly the credit. That electricity ought to be utilized for fire and light has long been known; the practical application test has been of few years' standing. That it will revolutionize motive power many believe; to the man who proves this will belong the credit. So with anæsthesia: many now believe that we will yet have a safer and better mode of producing the result than can now be accomplished by any of the means at present at our command. What this shall be, time may prove; and not to an accidental, obscure trial will belong the credit, but to the fearless public demonstration of the means. And so it is that Morton has generally been credited with the honors so richly due for his part in establishing the method.

A Manual of the Practice of Medicine. By George Roe Lockwood, M. D., Professor of Practice in the Woman's Medical College of the N. Y. Infirmary. With 75 illustrations in the text and 22 full page colored plates. Philadelphia: W. B. Saunders, 925 Walnut street. 1896. Price $2.50 net.

The flood of "Manuals" which has all but washed away the regular and full treatises on various subjects has seldom had a more illustrious raison d'etre than in the present volume. It is not necessary again to go over the reasons pro and con for these books; but we must admit that if they all reached the high standard of excellence and completeness exhibited in this manual of practice, we would refrain altogether from untoward remarks about them as a class. This work of little less than a thousand pages gives an excellent resumé and abstract of the present status of the practice of medicine. It is "up-to-date" from beginning to end. The classification followed is practically the same as Osler's and the author has taken great pains to select the best from the many sources at his command. Let us not be misunderstood; it is in every sense a manual—not a treatise; it does not aim at originality, except perhaps, in exhibiting the ability of its author as a gleaner. It does not elaborate theories, but states what seems to be the facts most consistent with our present knowledge of medicine. The illustrations are generous in quantity, if not always sublime in quality. The colored plates are excellent and of especial artistic worth. For fullness, clearness and thoroughness we have not seen a manual that seemed to us more worthy of the large patronage it will undoubtedly receive.

An American Text Book of Surgery. Edited by Wm. W. Keen, M. D., LL. D., and J. Wm. White, M. D., Ph. D. Forming one handsome royal octavo volume of over 1200 pages (10 x 7 inches) with nearly 500 wood cuts in text, and 37 colored and half-tone plates, many of them engraved from original photographs and drawings furnished by the authors. Prices: Cloth $7.00 net: sheep $8, net: Half Russia 9.00 Sold by subscription only. 2d Edition carefully revised. Philadelphia: W. B. Saunders, 925 Walnut street. 1895.

We have given the announcement of this work as contained in the catalogue of medical works by this publisher. The readers of our journal may remember several years ago, about the time that this publisher branched out into extensive medical works that we predicted great results; and it is with no little pride and pleasure that we have been able to confirm our prognostications. The series of "American Text Books" are a monument to any publisher; and of these series probably no work has received a more generous support than the volume of which we now announce a second edition. Of the numerous changes we cannot speak more to the point than by quoting the editors: "The effect of modern small arms in military surgery; a new section in Acœmogaly; the Hartley-Krause method of removing the Gasserian ganglion; the osteo-plastic method of resection of the skull, with a number of additions to operations and methods in endocranial and spinal surgery; with surgery of the chest a description of Schade's operation; in the surgery of the digestive tract, Witzell's method for gastrostomy; the use of Murphy's button in intestinal anastomosis; the consideration of retro-peritoneal tumors and of castralin for enlarged prostrate; a chapter on Symphyrectomy; Macewen's method of compressing the aorta in amputations at the hip joint; and the sections dealing with Fractures and Dislocations, Appendicitis, the Radical Cure of Hernia, and the more recent methods in amputations of the Breast have been especially enlarged, particularly in the matter of treatment."

So much for a brief statement of some of the changes. The volume is already too well known to need a review. For a mirror of the best surgical thought of America this volume will continue to claim the same recognition and support that characterized the first edition.

GAILLARD'S MEDICAL JOURNAL.

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Articles for publication will be received with the understanding that they are contributed exclusively to this journal. Reprints will be furnished at actual cost, orders for which should accompany the manuscript. Authors of accepted articles may receive twelve copies of the issue in which they are published. Necessary illustrations will be furnished without expense to authors when suitable drawings or photographs are furnished.

AN EXPLANATION AND APOLOGY.

The late appearance of our February issue has been no less a source of distress to our subscribers than to ourselves. Some things may be our fault: some are our misfortune; and to the latter class we can safely and honestly refer the accident which resulted in the complete destruction of our February issue by fire, after it was actually in the mailing wrappers. When we stop to reflect that it was only by the greatest good luck that any copy was saved—the cuts of every sort, type, forms, etc., having been hopelessly impaired, or irretrievably lost—we may be pardoned for expressing our gratitude that we ourselves are still alive. As a matter of fact, had the printers promptly delivered the Journal we would not have been placed in such a predicament; however, we shall do our utmost to see that it does not occur again; and if two issues coming so closely together cause confusion to the subscribers, we would suggest that he take them by easy stages, as a month may supervene before the next number appears, but not if we can avoid it.

This is not the first time that we have had occasion to call the attention of our subscribers to the fact that we tender them our space in which to give the results of their original work and personal experience. A great many professional men believe that unless they can write an article containing every reference to the subject matter since Hippocrates was an infant, the composition will not be worthy of a place in a high class journal. While such a belief may be more or less justified in writing for an encyclopedia, the reverse is more apt to be true of articles offered for publication in current journals. Enough effete matter creeps into all of them, and when the fresh experience of an earnest, conscientious and capable man untrammelled and unencumbered by the dust of a thousand years is offered for publication, it is like giving a draught of clean, pure, cold water to one who is weary and worn by travel over a long dusty road. Let us not be misunderstood: we do not underrate classical and scholarly work: but we do recognize that a great deal of attainment in both can be shown without loading the subject matter with what other people have said. A good many of our subscribers are continually in touch with much that is perplexing to themselves and instructive to their fellow practitioners. They must have had experiences which have often led them into paths not frequently trodden, if not entirely new; and in giving to their comrades the results of such digressions —good, bad, or indifferent, they not only unburden their own minds, but may gain comfort, consolation and information from others who have been similarly situated. The clinical record of cases of difficulty and interest will often elicit important information. Not only is this true of practice, but also it applies to everything affecting medical men and their work. Do not therefore be afraid to write what you think, what you believe, what you feel, what you have seen; send it along and if it seems likely to prove of interest to others we will be only too glad to give it a place. Another aspect of the question upon which we have not touched is the fact that it is not right to expect one set of men to do all the writing; not only so, but it is actually tiresome to the readers themselves; and we shall therefore expect each reader to feel that it is his duty as well as his privilege to contribute something to the fund of general medical information and literature.

GAILLARD'S MEDICAL JOURNAL.

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ORIGINAL ARTICLES.

SELECTED TECHNIQUE IN VAGINAL HYSTERECTOMY.*

By E. E. TULL, M.D.

Attending Obstetrician to the Demilt Dispensary, and to the New York Infant Asylum; Assistant Gynæcologist New York Cancer Hospital, etc.

Gentlemen:—I have chosen this subject to evoke a liberal discussion principally on the mechanism of Vaginal Hysterectomy and without reviewing all the methods employed, I wish to simply offer you such steps as I now advocate.

Modern surgery, while led by our knowledge of anatomy and physiology, is solely dependent for its execution upon a proper technique and mechanical skill.

Factors of the greatest importance are accuracy, with which we complete this operation, the time we consume, the risk of accident or the loss of blood and the non-interference with other organs. In briefly reviewing adjacent structures we consider the bladder and ureters, ovarian and uterine arteries, intestinal adhesions and the vagina. Another factor is the limited space in which we have to work.

Place patient in lithotomy position and expose cervix by well selected anterior and posterior vaginal retractors. If uterus is small enough to be removed en masse, the os should be closed first, either by plug of gauze or by vulsellum, grasping anterior and posterior lips. By this instrument make strong tractions forward and downward and at this time ascertain how far down the bladder is attached. It may be necessary to pass a sound into the bladder to satisfy one's self of its location. When this is done, carry a knife around the drawn-out neck anteriorly, going as close to bladder as possible without injury and posteriorly in the same line cutting down to muscular tissue of uterus.

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* Read before the N. Y. Medico Surgical Society, March 2, 1896.

Denude uterus posteriorly until the free peritoneum can be felt. Then peritoneum should be drawn down either with tenaculum or finger, cutting it with scissors transversely; this opening should be stretched large enough to admit two fingers. It is now wise to explore the pelvic cavity, freeing uterus of adhesions, also freeing ovaries and tubes. If necessary this space can be made large enough to admit the hand by cutting the vagina longitudinally, and it is much better to gain room in the same way than by cutting the vagina high up in Douglas' cul de sac transversely across the uterus; in this latter way we shorten the vagina. This much accomplished, cervix held by vulsellum, is drawn downward and the bladder is stripped from uterus with fingers or scissors until fundus can be reached. Then the peritoneum is cut transversely and this opening stretched with fingers to extend full width of fundus. The uterus is now free anteriorly and posteriorly. Dissect with scissors on either side close to uterus until, at a point above internal os, the uterine arteries can be felt in broad ligament. If these be tied sufficiently high up all the anterior and posterior branches supplying uterus and bladder may be controlled by this one ligature.

It often happens that the uterine artery is tied low down in its parallel course with the cervix before these branches are given off, thus causing much unnecessary and tedious delay in controlling hemorrhage.

With uterus thus freed, draw down the fundus, tubes and ovaries posteriorly into the vagina by hook carried up on finger into the fundus; or if uterus is anteverted it is better to bring it into the vagina through anterior space, although in this portion of pelvis we have less room.

With silk ligature carried either by King or Cleveland forceps, the remaining attachment of the broad ligament may be transfixed and tied off in one ligature. Grasp this stump with Jacob clamp outside of ligature and cut free this side of uterus; treat other side likewise. Uterus may now be delivered with appendages.

In most cases this is all that is necessary. The clamps applied to pedicle play a very important part in shutting off the peritoneal cavity, for by drawing down and separating the handles we bring together the broad ligaments, turning into the vagina all raw sinuses made.

Dress with iodoform gauze prepared in rolls two inches wide; carry strip of this into pelvic above and below and pack triangular space between forceps and vagina tightly. This is preferable to gauze handkerchief as pressure may be applied more accurately.

In case of a narrow vagina or large uterus inclined to tear, it is better to remove uterus first; at this time clamp tube and ovaries. Later, dressings and clamps removed, these may be drawn and tied off in the usual way. When having to deal with a large Fibroid it may be necessary to take a number of sections before it can be delivered. The first step in this procedure, tying uterine arteries, freeing bladder and posterior adhesions, is the same as in first case mentioned. Next split cervix antero-posteriorly, continuing this dissection as far up as can be reached, guarding the bladder by broad anterior retractors; draw apart these uterine flaps with two vulsella and cut from uterine sections until one side of uterus is delivered. One ligature is sufficient to control all bleeding on this side above uterine artery, which has already been tied. The other side is treated the same. Clamps are applied to distal side of ligature to draw together broad ligament flaps and close the pelvis: dressing applied in usual way.

I would emphasize the importance of ligatures instead of clamps, as they are less liable to slip and you have more space in which to work; also, the advantage gained by use of clamps to upper flaps to shut off peritoneal cavity, as well as to secure better drainage.

Would also beg to report a case of total extirpation in five and one-half minutes. This case left the operating room in seven minutes after the first instrument was applied to uterus.

I have removed a ten pound Fibroid per vaginam.

In conclusion claim in this way to be able to remove uterus, tubes and ovaries with less risk to patient's life and fewer complications to follow than by any other method.

—:o:—

TRANSLATION.

PATHOGENESIS OF THE ACUTE NEPHRITES. (Continued.)

Translated for Gaillard's Medical Journal.

By H. McS. GAMBLE, Ph.D., M.D., Moorefield, W. Va.

The action of the animal and vegetable poisons is admitted without question at the present day, experimental and even clinical proof of the disorders which cantharides determines not only in the epithelium of the convoluted tubules, but also in a diffused manner in all the tissues of the kidney, when repeated injections of this substance are made, has been furnished by numerous experimenters and by observations published by M. Potain. It is known besides that the essence of turpentine causes the indigo to disappear in twenty-four hours from the urine of the horse, by a veritable substitution that takes place in the renal cells, and we have in this fact another proof of the morbid influence of a vegetable substance upon the renal filter.

As to cold, burns or extended dermatoses, their mode of action upon the kidney is not determined.

Do these three factors operate by reflex action? Can we compare the nephrites which supervene in consequence of burns and of extended dermatoses to the disorders of the urinary function which follow painting over of the external integuments? These are so many questions to which it is difficult to reply, by so much the more because the cutaneous affections of microbic nature may act upon the kidney by reason of the micro-organisms, and because in numerous cases the applications made to the skin, for the purpose of treating these affections, may pass into the blood and affect the kidney in being eliminated. The toxines appear to play a certain role in burns. A toxic ptomaine has been extracted from the organs and the blood of those who have been burned, which seems really to be the cause of the greater part of the symptoms observed in these patients. However, an important element must have its share in the production of the nephrites.

Experiments upon the vagus nerve demonstrate that veritable subacute nephrites may supervene, in consequence of lesions of this nerve.

It is perhaps in the same line of thought that we must seek the explanation of nephritis a frigore.

The acute nephrites are then produced by very different agents, acting in the midst of multiple circumstances. In spite of the multiplicity of the etiological factors, certain authors consider acute nephritis as a specific disease resulting always from the same agency. Such an assertion cannot be admitted to-day. If acute epidemic nephrites exist, everything authorizes us in believing that these nephrites are due to slight general infections, passing unnoticed in the midst of the striking symptoms that depend upon the alteration of the kidneys. Besides, epidemics and cases of contagion are rare and rigorous observation of the facts brings us back to the multiplicity of the causes which the long enumeration above made proves, of the very different agents that provoke acute nephrites.

Among the latter are there any that may be preponderant? If it is legitimate to admit that the kidney is found directly injured by the solid pathogenic elements, it is necessary to well place in evidence the much more active role of the toxines. It is in fact ordinarily in the course of the intoxications that acute nephritis appears, which is easily understood, if we consider the physiological functions of the kidney charged with eliminating toxines and poisons.

III.

It remains to be known how this microbic or toxic filtration takes place, and what are the alterations that succeed it.

Is the mode of distribution of the micro-organisms in the nephrites subject to laws which can be founded upon physiology? A priori, the enormous pressure that is exercised at the level of the glomeruli allows the microbes to pass into the capillary arches, and thence into the intertubular network, where the circulation is slowed. May it not be admitted that the micro-organisms are eliminated directly at the seat of the glomruli and swept out by the urine? Experimentation furnishes contradictory results, some, with Faulhabert and Ribbert, show that the micro-organisms accumulate in the glomeruli, in the vessels, rarely in the connective tissue and almost never in the cells of the convoluted tubes. According to others (Enriquez), the micro-organisms accumulate in the labyrinthic capillary network, and thence by a more or less direct route reach the lumen of the convoluted tubes.

These two opinions are equally true; microscopical researches complete the experiments of the preceding authors: the distribution of the micro-organisms in the kidney may be explained at the same time by the functions of the kidney and by pathological anatomy. It is in the region of the glomruli that the micro-organisms ought to filtrate; their ulterior dissemination takes place probably according to the diminution or augmentation of the blood current and in accordance with the points of least resistance, wherever the micro-organisms find old lesions which facilitate their arrest and their pullation. It is in effect sometimes the glomruli which present veritable microbic clusters, sometimes, especially the epithelium of the convoluted tubes, sometimes, the generality of the different elements of the kidney (epithelial, connective tissue, blood vessels and lymphatics). The epithelial cells are sometimes truly gorged with them; we find again the micro-organisms in the very center of the uriniferous tubes (tubuli contorti, the ascending branch of Henle), in the midst of broken down and tumefied cells. In certain primary bacteric nephrites they are again found under the form of collections in the region intermediary between the cortical substance and the medullary substance. In some cases, the vessels alone are filled with microbes (typhoid fever, erysipelas, pneumonia), and this total filling up of the vascular network, in spite of the absolute integrity of the epithelium, produces anuria (erysipelas, scarlatina, charbon), or sometimes give rise, when the arterial wals are ruptured, to considerable hemorrhagic raptus (interstitial tissue, convoluted tubules, collecting tubes), and to hæmaturia.

The micro-organisms then of themselves provoke general or local lesions, the following distinction admitted by Ribbert, is too schematic and does not correspond with the majority of the cases reported. This author, in effect, opposes these two processes; the one interstitial disseminated by circumscribed islets and due to the presence of micro-organisms; the other diffused epithelial, due to the elimination of their toxines.

IV.

It thus does not seem that there are any special anatomical features which allow us to distinguish cases of acute nephritis from one another and which bear the stamp of their origin.

Nothing authorizes us to make an essentially etiological classification. Apart from a few more or less important particularities, the analytical works of late years and the detailed study of the diphtheritic, typhic, pneumonic and erysipelatous nephrites, have demonstrated no characteristic lesion peculiar to each one. In the group of acute nephrites, the idea of infection being recognized, the evolution alone of these nephrites sometimes serves to establish distinctions between them.

However, it is possible to draw a parallel on the one hand, between the alterations of the kidneys consecutive to general diseases infectious or toxic, of which the formed or chemical agents have been transported by the blood, and which might be classed in a chapter on pathogeny under the head of "descending" nephrites, and, on the other hand, between the lesions that supervene in consequence of the infections of the urinary passages and the progress of which has taken place by an ascending movement.

In the ascending nephrites the papilla is first attacked and altered; the consecutive lesions are produced according to the canalicular or lymphatic systems which follow after them, or are in contact with them; the invasion of renal parenchyma takes place from the pyramids towards the cortex; it is progressive and almost always under the dependence of micro-organisms. The descending nephrites, on the contrary, are glomerular and arterial at the commencement, cortical and generalized towards the conclusion, with, however, a marked tendency to respect the medullary substance. In general, they are rapid in their evolution.

In conclusion, the ascending or surgical nephrites are systematic, progressive, spontaneously incurable, slow in their progress; the descending or medical nephrites are generalized, fugaceous, the more frequently curable. In the former the infectious agent has little tendency to eliminate itself, it remains in place for the purpose of keeping up the lesions; so, when the disease presents any remissions, it is easily aroused under the influence of common causes, cold, excesses of dietetic rules, fatigue, etc. (Guyon). On the contrary in the latter the infectious elements or the toxic substances are easily swept out and carried off by the urine. The cure is complete and final in the majority of cases. But, as our instructor teaches, Professor Dieulafoy, we must count upon relapses of a process but imperfectly extinguished, which may, in certain cases, lead to chronicity.

SELECTIONS.

Art. VIII.—THE ENDEMIC FEVER OF THE EASTERN SHORE.*

By GEO. W. LeCATO, M.D., Wachapreague, Accomac Co., Va.

Richmond Academy of Medicine and Surgery, Jan. 14, 1896.

The following officers were installed for the ensuing year: Dr. Landon B. Edwards, president; Dr. John N. Upshur, first vice-president; Dr. J. P. Massie, second vice-president; Dr. J. W. Henson, third vice-president; Dr. Mark W. Peyser, secretary; Dr. William R. Jones, assistant secretary; Dr. R. A. Nichols, librarian. Dr. G. W. Le Cato, invited guest, read a paper on the "Continued Fevers of the Eastern Shore of Virginia."

Mr. President and Fellows:

At the request of the chair, I have selected, as the title of this paper, a subject I trust will be none the more interesting because commonplace and familiar—"The Endemic Fever of the Eastern Shore."

Twenty-five years ago, the above title would have suggested the discussion of a disease differing materially in most of its essentials from that to which it now applies; for it is absolutely true, as we all know, that our present endemic of continued fever has not only quite supplanted the old types of our former periodical endemic, but is doubtless increasing in prevalence year by year. This fact naturally attaches a certain practical importance to its study, and furnishes my excuse for this subject. What I may have to say, however, will be merely cursory, embracing mainly such views as have been drawn from my personal observation, leaving you to take for granted the doctrines of etiology, pathology and treatment commonly accepted by the profession.

In the first place, I shall state, as my individual conviction, that all the forms of continued fever prevailing on the Eastern Shore are of one origin, and due to a uniform specific poison. In other words, I believe that all the forms of our present endemic may be safely summed up under the title of typhoid fever—a specific disease, varying from time to time in many of its salient features, like other morbid entities, mainly as the result of peculiar local environment, systemic condition, and methods of treatment. This idea is admittedly true of most diseases. No one would expect, at the present day, that pneumonia would recover, as a rule, under the profoundly sedative treatment of Kasori, or the sanguinary lancet of the phlebotomists of former days. But statistics prove that the success of our fathers, in the treatment of this disease, was quite equal to that of ours. Pneumonia must have changed type in some particular essential; and yet we have the sub-crepitant rale, pulmonic consolidation, the rusty sputum, occasional pulmonary œdema, and even purulent infiltration—the whole sum of pathological sequence. According to my observation, we have, in the continued fever of to-day, as a rule, the prodromic malaise; the tendency to epistaxis and other hæmorrhages; marked sensitiveness of the bowel, in spite of constipation; the diurnal cycle of temperature; even rose-spots in some cases; occasional perforations of the bowel—in fact, the well known evidences of a peculiar specific poison, expending its local force in the right iliac region, and in the presence of which our antiperiodic sheet anchor is worse than a delusion. Granted that in private practice we are not often permitted the post-mortem evidences of Peyerian inflammation and ulceration; so complete a picture leaves us little room to doubt that the fever of to-day is the genuine enteric of Geo. B. Wood, the dothinenteritis of Bretonneau, and the typhoid of Louis.

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* Read before the Richmond Academy of Medicine and Surgery, January 15, 1895.

True, in an experience of thirty years, I have recognized the disease under varying manifestations. We find at the present day less coma-vigil and muttering a delirium, as a rule; we have less trouble to restrain the bowel; cases do not run so rapidly to what is known as the typhoid state; in a word, there appear to be more mild attacks now than formerly. How much of this may be due to a recent modification in the intensity of the poison, and how much to the present vogue of withholding active medication, may be an open question; but my observation has never led me to believe the essential nature of the disease has sufficiently changed to entitle it to a new name.

I am sure I have never recognized a typical case of Dr. Woodward's so-called typho-malarial fever. As a matter of fact, I have not observed the two distinct types that enter into this supposed hybrid, manifesting themselves unmistakably in the same individual at the same time. I think I have never seen the one type run into or consecutively follow the other. Finally, I have never known any case of so-called typho-malaria to be cut short, or even modified, by anti-periodic treatment. Rather, on the contrary, I have been led to suspicion that these two poisons are so specifically distinct as to be in some way mutually antagonistic. Certain it is, however explained, that on the Eastern Shore, as elsewhere, the presence of one type, as the endemic, materially qualifies the prevalence of the other. I can recall a period in my earlier practice when continued fever, in Accomac and Northampton, was a comparatively rare disease. The unfortunate reputation the peninsula had earned at that day as a hot-bed for malarious poisoning, has not yet been lost, though, as we all know, no longer deserved. If we accept the so-called typhoid germ as the etiological factor in the production of continued fever, and the micro-organisms of Laveran as the essential element in paludal poisoning, it would be interesting and instructive to demonstrate the correctness or absurdity of the convictions I have stated; but, so far as I know, these important demonstrations have not been made.

Of the peculiar character of the typhoid poison, we have, at present, only a broad field of speculation and the wonderful revelations of the microscope. Unfortunately, it may be said of the fashionable microbic theories, that while they have enlarged our learning, they have not greatly increased our practical wisdom. Does the disease really depend upon a microbe? If so, what are the peculiar conditions of its generation? Where does it mainly inhabit—the food we eat, the water we drink, or the air we breathe? And what peculiar change of local condition will explain how and why the typhoid germ of to-day should have so completely supplanted the miasmatic germ of thirty years ago. These are all practical questions of the greatest importance to us as practitioners—questions for which we are vainly seeking answers, not only from our own observation, but from the scientific investigations of others; for, locked up in these mysteries are hidden the problems of prevention and cure. Medical literature teems with plausible theories; you pay your money and you take your choice. Practically, the solution appears as remote as before. I confess that, individually, I have inclined to many different theories along this line. For instance, I had found typhoid so often among families drinking out of polluted and even filthy wells, I became a confessed convert to the poisoned water theory. Ultimately, I had a patient who was herself a crank on this very subject. For months no single drop of water had been allowed to pass to her stomach that had not previously been boiled. Strange to say, she was the only member of her large family stricken. I can recall a family in which every member was afflicted seriatim, who got their water from a driven pump thirty feet under ground, the pump itself situated on the highest elevation of the premises.

On the Eastern Shore, at least, the water supply derived from underground springs of higher or lower level, evidently has no connection with the prevalance of typhoid, as has appeared in other situations.

Another fact, hard to reconcile with the trend of our accepted theories, is that the poison is not necessarily bred in filth. The lady of the household last referred to, was an uncomprising crank on the extremes of cleanliness. Indeed, on general principles, it may be said that the higher the civilization, the more obnoxious we become to typhoid infection; certainly the poor and squalid appear to have no peculiar claims of class distinction to the disease. And so, unfortunately, some practical negation always appears to shut us off in the line of any theory we may attempt to pursue. For the present, to be candid, I confess I am entertaining no very settled notions respecting the etiology of typhoid fever. I am inclined to think we know as little of practical value on this subject as did our fathers. They hinted darkly, in their day, at certain poisonous "humors" manufactured in the great laboratory of nature under laws of chemical affinity beyond their chemistry. In the later wisdom of our day we call these results ptomaines, without being able to explain the chemical processes involved in their generation. The guess of our fathers was probably a cloak for their ignorance that fitted as becomingly as the newer cut of a later day, and doubtless they wore it as honestly. And I am verily coming to believe in my own mind, the time is not distant when the ptomaine—the old "humor" of our fathers—will play a stronger role in fashionable etiology than the present popular and omnipotent microbe. History repeats itself in many divisions of human research. It may be we are already drifting backwards towards the theory of our fathers, to take new bearings from old land-marks and lay out new lines of research not so much in the domain of bacteriology as in the expanding and limitless field of spontaneous toxicology.

I have never believed for a moment in the contagion of typhoid fever. It may be infectious in certain ways not well understood. Its specific poison is doubtless localized, and those obnoxious to it, exposed to like conditions, experience like results. I think I have never discovered stronger evidences of the contagiousness of this disease than apply with equal force to malarious fevers and even common colds.

I shall not consume a moment with reference to its symptomatology. We all agree that the diagnosis is often difficult and sometimes impossible in the earlier stages; but that the thermometer may be safely trusted to settle the doubt, even short of those characteristic features common to its full development. And, in the matter of prognosis, I shall simply say there is no disease known to us of so grave a character, involving so long a course of continued pyrexia, and subject to so many complications and accidents, that so often ends in complete recovery. Still, the maxim of prognosis laid down by the older writers has probably never been improved upon, namely, that while no attack is so desperate as to encourage despair, there is none so mild as to be without danger.

What I may say of the treatment will be in nowise exhaustive—having reference mainly to my own views and practice—not because I wish to appear egotistical, but because I desire to invite discussion; to draw out a comparison of opinions and experiences for my own instruction as well as yours. I have held for many years that the professional world should long ago have reared a monument to that philosopher, Pitcairn, who, when asked what he thought of a certain treatise on the cure of fevers, replied, "I do not like fever curers. You may guide a fever; you cannot cure it. What would you think of a pilot who attempted to quell a storm? Either position is equally absurd. In the storm you steer the ship as well as you can; in a fever, you can only employ patience and judicious measures to meet the difficulties of the case." Perhaps the application of this doctrine, limited to the management of typhoid fever, has not only gone a long way to make the fever of our day a milder disease than formerly, but has really involved the explanation of our present success. Until we unravel the mysteries before alluded to, typhoid will probably remain in the class of so-called self-limited diseases. However revolting to our sense of professional pride, we may as well admit there is no weapon known to our science that will strike down the malady at any period in its progress, or materially abridge its duration. Among the painful reminiscences of my earlier professional life, I recall to this day the hesitation with which I accepted this fact. And yet, what serious disease is there in which more may be done to relieve suffering, ward off danger, and ultimately lead the exhausted victim to recovery?

I have an abiding faith in the thorough, but careful, cleansing of the intestinal canal as a preliminary early treatment. The bowel is to be the battle ground, and the ileum to bear the main brunt of the contest. If this is not the avenue through which the poison originally reaches the circulation, it is certainly the outlet of depuràtion, and consequently, a dangerous seat of auto-infection. Here the long series of morbid processes are to be carried on, whether we incline to the modern theories of microbic multiplication or the older notions of chemical putrefaction and fermentation. But the choice of means to this end is a matter of grave importance. My own experience is that the most unpromising cases falling under our observation are those that have been doctored at home with compound cathartic pills and other irritant purgatives. One of the earliest deaths I have ever seen in the disease followed two or three doses of croton oil, administered with the avowed purpose of "touching" an innocent and falsely accused liver. In spite of some recent journalistic assertions, I should not dare attempt the use of any purgative irritant to either the mucous or muscular coat of the bowels. I usually give one or two small doses of calomel, following with salines and large enemata to flush the bowel. I am still old-fashioned enough to believe that calomel unloads the portal circulation, that it stimulates glandular excretion, and that bile limits intestinal fermentation.

An imperative necessity is the regulation of the diet. The victim has a long and doubtful struggle to encounter; the vital forces must be provided for. And yet states of abnormal temperature impair and even suspend the digestive powers. Solid food is rarely digested, and if it passes into the bowel it must necessarily become not only an irritant, but if you please, a culture field for microbes, or a fermenting mass that only adds to the tympany, diarrhœa, and consequent pyrexia. Fluids are more easily absorbed and furnish little residual bulk. The practice laid down in some of the English hospitals to give no food during the fever, that will not easily pass through the meshes of a fine sieve, is at least safe. I encourage the free use of water, plain, medicated and flavored. I believe in its refrigerant and depurative action.

Is there anything to be done to limit the propagation of microbes, or abate the tendency to putrefactive changes in the bowel and blood? This is a very interesting practical question, and medical opinion is in no wise agreed upon the answer. A number of years ago I began to give what we know as carbolized iodine, partly on the theory of its germicidal properties, mainly because of the professional policy that demands in all cases some sort of medication. I shall not tire you with any notes on this subject, but will simply say that without expecting marked results my experience has confirmed my confidence in the remedy. Recent observation has inclined me to the belief that the phenic acid in this combination is the valuable factor, and I usually leave out the iodine now because it renders the acid less acceptable to the taste. There are few patients who object to small doses of the acid properly diluted and flavored, and to get its results, it must be regularly and steadily continued day by day, from early morning until late bed time. I never give medicine or food during the night, except to meet the demands of a pressing indication. While this remedy is evidently not a direct antipyretic, experience proves that after its administration for several days the temperature falls, as a rule, the diarrhœa moderates, the tympany lessens. Recent studies of the physiological effects of phenol appear to indicate that it is not only an antiseptic, germicide and local anæsthetic, but a vaso-motor excitant; Bert and Jolyet claiming that it acts like strychnia on the excitability of the medulla. If this be true, it stands on physiological grounds as an ideal remedy in this and other low forms of fever due to septic poison. This view accords with my own experience. Dr. Robie Wood, of New York, has lately claimed that it tends to prevent the falling of the hair.

The treatment of high temperatures has been, for the past several years, one of the most interesting questions connected with the management of fever. In private practice, the Brandt method of cold baths is an awkward and bunglesome recourse, which may be simply eliminated from present consideration. While I might find a case in which I should be tempted to employ it, I have not yet found such a case. I rarely use any internal medicine for the reduction of temperature. I experimented in my own individual case, during an attack of this disease, with some doses of the coal tar derivatives, and I shall never attempt this treatment again. My personal conviction is, that under the readings of the thermometer we are apt, in this day, to grow unnecessarily apprehensive in the matter of temperature and lose sight of other indications hardly less important. It is undoubtedly true that high temperatures coincide with desperate conditions, but as to which may be the cause and which the effect is always a question of practical interest. For instance, an excessive temperature induced by a mass of fermenting milk-curds in the bowel could not be scientifically and appropriately treated with a cold bath. And it is wise in all cases of hyperpyrexia to investigate for any possible condition that may explain the rise of temperature with the hope of being able to apply treatment to the cause rather than the effect.

In spite of the commonly accepted view of damage to the integrity of animal tissues under high temperatures, I believe our apprehensions are in danger of being over-excited. Experiment has demonstrated, time and again, the remarkable resistance of the human body to extremes of heat, even under long exposure. It is a question, then, how far we involve either prostration or unnecessary perturbation. I can recall several cases of this disease, making good recoveries, in which the average of minimum temperature did not fall below 105° for eight days; and experience has certainly taught me to look with more anxiety to the pulse for a warning of peril than to the thermometer. Sponging, either cold, tepid, or warm, over the whole body, and continued more or less persistently during much of the afternoon and evening, when the maximum range is being reached, has rarely failed, in my practice, to moderate the temperature and promote comfort and sleep. The end is thus attained without unnecessary fatigue, dangerous movement, or even mental shock. In addition, I have sometimes given one or two doses, 5 grs. each, of antikamnia and quinine, during the afternoon and evening, for the purpose of anticipating and prolonging the remission, softening the skin, and securing quiet sleep.

When the patient begins to show signs of muscular prostration, and the force of the heart's systole is apparently failing, my main reliance for years has been placed on strychnia given in small doses and often. I feel sure that many a flagging heart may be sustained by this remedy through the trying ordeal of the last weeks of an attack. On the subject of alcohol, I have nothing to add to what you already know, except to say that in late years my doses of whiskey are much smaller than they used to be, and that I expect less from it now than formerly.

Of the manifold incidents and accidents presenting themselves in the course of the disease, I have not the time left to speak. A consideration of these would make up really the most interesting and important part of a paper on this subject. It is exactly here that the best judgment of the physician is most severely taxed and his skill exemplified. It may be said, in a general way, that the doctor who is the most watchful, the quickest to apprehend the peril of complications, and the most resourceful in wisely meeting emergencies, will have the best success. But the field is too broad to be entered. I want to call attention, however, to one, not very frequent, but occasional, distressing symptom in nervous subjects suffering with this disease—more common now than formerly—insomnia. Patients do not always sleep who appear to sleep; are not always properly rested by apparent sleep they do get, because the sleep is not sufficiently profound. I shall never forget the luxury that a few doses of opium brought to me in the later stages of this fever. I will add a passing reference to that common and serious event which so often complicates mild as well as severe cases—hæmorrhage from the bowel—to say I have found large doses of opium the most useful treatment. The exigency is often urgent and pressing; there is no time to waste on astringents. Peristalsis must be profoundly controlled, and the heart's action also. These threatening cases often do well eventually, but it happens the only case of typhoid fever I have lost during the past four years was a very mild case that died speedily from this complication. I had meant to say something about relapses and recrudescences of fever, so common in typhoid, but this paper has already exceeded its legitimate limits. I can only repeat, it was not designed to be in any way complete or exhaustive; and I submit it merely as a text for this afternoon's discussion, that we may wisely compare views and experiences, and thereby further fit ourselves to measure up the serious responsibilities of our profession.

DISCUSSION.

Dr. John N. Upshur said the paper was characterized by good, hard, common sense, and there was very little with which he could take issue. He is in accord concerning the germ theory; but believes typhoid is contagious as well as infectious, and referred to one case infecting every one who came in contact with her until twenty were affected. He believes he contracted the disease immediately from his mother. Dr. Upshur said he was interested in the statement that bilious fever had been replaced by endemic typhoid, on the Eastern Shore, and thinks it due to the removal of forests and consequent free ventilation from salt water; but he does not see why typhoid should exist there, taking into consideration the care taken with farmhouses and surroundings. He is in accord with Dr. Le Cato concerning treatment, especially with regard to strychnia. The Woodward treatment, the philosophy of which the doctor said he could not understand, was referred to.

Dr. J. S. Wellford said he was satisfied that there is such an entity as typho-malarial fever.

Dr. Arthur Jordan stated that in typhoid there was certain indications in the blood, in the first week:—absence of leucocytosis. In the second week, there is a leucocytosis, but it differs from that of other acute inflammations in that it is a lymphocytosis. In malaria, there is always the plasmodium. Therefore, it seems that a microscopic examination of the blood will demonstrate whether or not there is typho-malaria.

Dr. J. P. Massie inquired if Dr. Jordan meant the disease was a hybrid.

Dr. Jordan responded that the disease known as typho-malaria has not brought out any distinct appearance. Investigations have failed to show that the plasmodium and Eberth's germ are present at the same time and exerting at the same time their specific influence.

Dr. W. S. Gordon thinks Dr. Le Cato has arrived at the practical point. His studies have shown that where there is a dearth of civilization, there is malaria; but as soon as the country becomes settled and drained, typhoid appears. Therefore, we must look to civilization for the cause. It is hard to understand how two specific germs, acting at the same time, can produce a modified disease. He grants that one can have two specific fevers at the same time; but why do we not have the specific manifestations of typhoid and malaria simultaneously? Chills may be seen in true typhoid. We are bound to the fact that we must establish the main symptoms, e. g., recurring chill of malaria. Osler has established the fact that the so-called typho-malaria is typhoid.

Dr. Upshur brought up the question of contagion. If the disease is of germ origin, it must be granted that it can be conveyed by air or water. He is rapidly coming to the belief that it is a water-borne disease, and we must look to fluids as the carriers. Dr. Gordon referred to an epidemic occurring twenty-one days after partaking of water from a well he had condemned. Concerning treatment, he is of the opinion that in spite of Pepper's nitrate of silver and others, we have not yet arrived at any specific course.

Dr. Hugh M. Taylor stated that he had failed to observe in a typical typhoid fever, any manifestation to justify the suspicion that it was in any way related to malaria. Certainly, in his hands such anti-malarial remedies as quinine, not only did no good, but did harm. He thought everything tended to show that the term typho-malarial fever is a misnomer. He is wedded to the idea that the poison of typhoid is water- or milk-borne, the exceptions being so few that they are not worth considering.

As far as his observations go, there is very little well-manifested malaria in Richmond, and he does not think that he sees one case of chills and fever a year; but we do have our share of typical, as well as atypical, typhoid.

As to the possible existence of two specific germs existing and operating at the same time in patients, he does not think it impossible. In exceptional instances in typhoid, there is developed an osteo-myelitis, limited as a rule, in extent, with a strong tendency to symmetrical development, and to suppuration. Whence comes this pyogenic micro-organism? Has the typhoid bacillus, under changed environment, acquired pyogenic properties, or has there been created by the systemic depression of typhoid a locus minoris resistential, and a suitable point for the lodgment and morbific action of pyogenic organisms brought to the point of lessened resistance by the blood? It is known that one can have typhoid and pneumonia; can have the product of the tubercular bacillus infected by pyogenic matter, and both will contain material potent for local and systemic injury to the tissues. Infective arthritis exceptionally occurs in connection with typhoid fever, as well as other specific fevers. This inflammation may, or may not, go on to suppuration. If it does, is the suppuration due to pyogenic properties assumed by the specific germ of the disease, or to pyogenic microbes imported from without and transported to the joint by the blood; or is it a result of the combined action of the two organisms? This is an unsettled problem, but in view of the fact that the typhoid bacillus and the common bacillus of the colon have so many points in common, the doctor does not see why the typhoid bacillus may not, under changed environment, assume pyogenic properties, as well as the bacillus coli communis?

Dr. Jacob Michaux asked, May not the disease be entirely distinct from either typhoid or malaria? He is very much disposed to believe it is a different affection, looking at it from either point of view.

In treatment he thinks water is of great value in depuration; and he is surprised at the injunctions limiting it. It is the medium of exchange in the body, and plays a great part in elimination. Taken internally, or used locally, it acts upon the skin, reducing temperature. Strychnia is a decided advance in treatment.

Dr. Upshur remarked that one may have typhoid in a malarial district, the latter impressing itself upon the case. Post-mortems show how malaria affects the ulcerations of the bowels, the edges having characteristics almost distinctive.

Dr. Le Cato in concluding said he was glad his paper had brought out so many points and had directed the discussion into such various channels. He remarked that each case of typhoid doesn't present all the symptoms, but taking them as a whole, we have a complete picture. Variations of exceptions do not vitiate the rule, and it is unfair to assume that the cause of a mild attack, the same poison does not lie at the cause. In his country, the prodromata are those of typhoid:—slowly increasing temperature, tendency to hemorrhage, tympanitis, especially the latter. In these cases we have an accurate description of typhoid. He has never yet been able to learn that the germs of typhoid and malaria have been demonstrated to exist at the same time. He thought he had satisfied himself beyond cavil, that typhoid is water-borne, but later observations have shaken his belief. He cited a case in which the patient refused for two months to use unboiled water and had quarantined her residence, and yet she contracted typhoid. Other instances occurred in a house situated at the river's edge on a sloping bank, water being supplied by a driven pump 30 feet deep. Tenement houses were situated lower down. These escaped, while the former was affected.

Mark W. Peyser, M. D.,
Secretary and Reporter.

ANAEMIA: ITS CAUSE AND TREATMENT WITH PEPTO-MANGAN

(DR. GUDE'S).

By GEORGE D. BARNEY, M.D.

House Physician to the Winyah Sanitarium, Asheville, N. C.
(Formerly of Brooklyn.)

Anæmia is a disease that we find in all classes and conditions of the human family, females in excess, of every nation and clime, its victims made up as an average of childhood, youth, and old age.

Classification of Anæmias.—1. Simple anæmia, where both the hæmoglobin and the corpuscles are diminished.

2. Chlorosis, where we find the hæmoglobin diminished and the corpuscles normal.

3. Primary chlorosis or pernicious anæmia, where the corpuscles are diminished and the hæmoglobin is relatively increased. Perhaps it might be better stated by saying that the percentage of decrease of corpuscles is greater than that of the hæmoglobin, which latter may fall to twenty per cent.

The symptomatic varieties of anæmia may be due to many causes:

1. Hæmorrhage.

2. Pathological discharges, such as prolonged lactation, sexual ex-

cess, profuse menstruation or suppuration, albuminuria, diabetes, and watery diarrhœa.

3. Malignant growths.

4. Toxic and infective, such as carbonic-dioxide poisoning, from tea, tobacco, coffee, alcohol, tuberculosis, and syphilis.

5. Animal parasites.

6. Obstacles to taking food which are mechanical in their nature.

7. Dyspepsia.

8. Venous stasis in cardiac and pulmonary disease.

9. Impaired sanguinification in diseases of cytogenic organs, malaria, leucæmia, or Hodgkins disease.

10. Fever.

Ætiology.—Predisposing causes:

1. Sex: females in excess.

2. Age: childhood, youth, and old age.

3. Constitution: those having a weak and irritable constitution.

Exciting causes.—Deficient blood supply; want of light and air; excess or defect of body exercise; unusual states of temperature; increased expenditure of unoxidized material; menstruation or lactation; psychical influences; depressing emotions.

The symptomatology of anæmia may be divided into the dropsy, loss of body weight, and fever.

Alimentary.—Retching, vomiting, atonic dyspepsia, constipation, sometimes diarrhœa.

Circulatory.—Palpitation of the heart, faintness, præ-cordial distress, hiccough.

Respiratory.—Dyspnœa, slight cough without expectoration.

Genito-urinary.—Polyuria; variable menstruation; sexual torpidity.

The composition of the blood has recently received a very considerable attention. Gorup and Besanez state that the blood of man contains one part of iron to two hundred and thirty parts of the red blood-globules. C. Schmaltz, in his investigations, says: "The specific gravity of the human blood varied from 1.059 in the male to 1.056 in the female," and he also says the ingestion of a physiological solution of salt, a thousand cubic centimetres, had a very feeble and short influence on the circulation.

In anæmia and cancerous cachexia the specific gravity may fall to 1.030; it varies according to the amount of hæmoglobin it contains.

In serious disease of the stomach the mass of blood is diminished on account of inanition.

In phthisis and cardiac disease its density is increased, because of the slowing of the peripheral circulation.

Meyer and Pernou found that the iron in the liver cells of the fœtus was ten times as great in amount as in the grown animal, showing that it might be stored there to provide for future growth.

Jacobi injected iron into the blood-vessels of dogs and rabbits, finding that ten per cent. was excreted by the bowels, liver, and kidneys. Of that deposited, fifty per cent. was found in the liver, the rest in the spleen and kidneys, also walls of the intestines and other organs; it was all removed from the blood two or three hours after the administration.

The excess of iron stored in the liver may be looked upon as a physiological and not a pathological process.

In estimating the value for the increase of iron in the hæmoglobin, it is quite necessary that we do not trust entirely to the physical examination of the heart and blood-vessels, the color of the mucous membranes, and condition of the skin. We should have an exact means of measuring the hæmoglobin of the blood.

Richert, of Vienna, makes a hæmoglobinometer which is quite as accurate as any in ascertaining the amount of hæmoglobin contained in a given specimen of blood.

No doubt but what the future has in store many improved methods to thoroughly examine blood.

You will find, upon examination of blood taken from a case of anæmia, the hæmoglobin diminished, and, as the patient grows worse, or, rather the anæmia progresses, next reaching a chlorotic state, we examine the blood again, and find the corpuscles diminishing.

Anæmia is the sneak thief of all diseases. How gradually it creeps through the system to weaken and debilitate, leaving vital energy more or less diminished!

How often we see cases of headache, impaired vision, neuralgia, pulmonary diseases, indigestion, constipation, loss of appetite, and a lack of energy in general, all of which originated as anæmia; and the suffering patient does not realize how gradually they slip along into these conditions, whereas, if taken in time, much suffering could have been avoided.

Let us now look and examine at what the post-mortem knife has revealed—a liver degenerated, enlarged to twice the normal size, the edges thickened and rounded, the surface smooth, the tissue touch firm, inelastic, more or less translucent and of a brownish-yellow color.

This degeneration usually commences in the walls of the intralobular blood vessels, causing them to become thickened and translucent; the liver cells are squeezed by the thickening of the vessels, and may become atrophied, sometimes completely so; indeed, it has been stated by some observers that the liver cells may also become waxy; they not infrequently undergo fatty degeneration; the blood contained in the liver considerably diminished, nearly or entirely absent.

Now, then, we will examine the kidneys. Here we find the most common and yet most important form of kidney disease—a state of diffuse nephritis. The kidney varies in size, the capsule is opaque and more or less adherent, the surface is finely or coarsely nodular; in the tubes the epithelium is changed, especially in the tubes of the cortex, the walls are swollen, finely or coarsely granular or fatty, or completely broken down, or the seat of hyaline degeneration; the tubes containing cast matter, also blood, pus cells, and small, flat, nucleated; in places the tubes are denuded of epithelium, the walls thickened, or they may be the seat of waxy infiltration; in the stroma there is a new growth of connective tissue; this is usually found in patches about the Malpighian bodies and the blood vessels in the cortex; the walls of the arteries are thickened.

The next organ to examine, and not by any means least in importance—the heart. Here we find a transformation of the muscle fibres of the heart into fat, which has collected in the fibres. This degeneration is sometimes quite universal, but more frequently occurs in patches, and may lead to a thinning of the walls, or to a rupture of the heart, or to inability to fulfill its functions, and is often the cause of sudden death. These conditions may be secondary to hypertrophy of the heart, to inflammation of the heart muscles or to pericarditis, to disturbances of the circulation in the coronary arteries by inflammation or atheroma, and very many times are due to a deteriorated condition of the blood.

In speaking upon the ætiology of anæmia, we may say that many times there is a deficient amount of proper food taken; the hygienic surroundings are unfavorable to good health; excessive work, improper rest, mental anxiety, prolonged and frequent nocturnal emissions, excessive nursing or excessive menstruation, chronic intestinal catarrh, Bright's disease, diabetes, and malaria.

To successfully treat anæmia it is necessary to fulfill the indicatio causalis—presupposing a consideration of the subjects mentioned.

The indicatio morbi brings up the consideration of food, which should be nourishing and easily digested, mostly nitrogenous; exercise in the open air, the amount of which should be somewhat regulated; the breaking off of bad habits, and treatment by remedies.

In recent times it has been observed that the thæmoglobin of the blood has increased after moderate bleeding. Dogiel, on the strength of experiments upon dogs, confirms the deductions of Scholz that moderate bleeding, say with ten or fifteen leeches, does not alter the arterial tension; but if this is repeated every three or four weeks the patient gains in weight and the number of blood corpuscles is increased.

Vogt also found the hæmoglobin to be increased under similar circumstances.

Schubert treated a number of cases of chlorosis by bloodletting and hot baths. The venesection was at the rate of seven to fifteen grains to the pound of body weight each bleeding. The patient was kept in bed from twenty-four to forty-eight hours after the operation, and this treatment was repeated once or twice each year.

Treatment with laxatives has at times been followed with much success.

Hamilton says that if he were compelled to treat anæmia by either laxatives or chalybeates he would use the former.

It is Sir Andrew Clark's theory that anæmia arises in a large number of cases from self-infection, or, in other words, a large number of anæmias are of fæcal origin. There is, no doubt, a good deal of truth in that statement. However, the most rigid and extraordinary antisepsis, which nowadays can be readily obtained by naphthaline, salicylate of bismuth, or beta-naphthol, does not meet with the success that we should expect although quite recently Pick has professed to have obtained good results in chlorosis from this method. My experience thus far is that the method of treatment by laxatives and bloodletting will be satisfactory in a limited number of cases only. However, it is safe to say that neither in bloodletting nor in laxatives, nor yet in securing intestinal antisepsis, can we hope to obtain such brilliant results as by the administration of iron.

In giving iron we have up to this time been greatly hindered by certain apparently insurmountable difficulties.

Blaud's pills, so much lauded and popularized by Niemeyer, certainly fail in a considerable number of cases. Notwithstanding the large amount of iron which one can administer in them, in many instances improvement does not follow their prolonged and uninterrupted administration. I am inclined to think that the potash is partly responsible for this, since it is, as we all know, one of the agents that promote waste.

The tincture of the chloride of iron has easily held the first place in popularity and efficiency. Combined with phosphoric acid, when well borne by the stomach, its therapeusis is unassailable.

The formula of Dr. Flint has for many years been a favorite.

When we find a coated tongue, feeble digestion, and constipation, the incture of iron is contraindicated. I should rather say that these conditions called for a previous purgation and corrected digestion preliminary to a course of ferruginous treatment.

Castellino has found in his experiments that hæmoglobin is absorbed rapidly, is always well borne, increases the number of red cells and the specific gravity of the blood, and improves the general condition. If the administration of the hæmoglobin, however, is stopped before the normal condition is reached its effect is only fugitive.

In secondary anæmia it has failed completely in that its effects are only transitory. The use of this preparation, however, is extremely limited.

Since I am of the opinion that iron is our sheet anchor in the treatment of anæmia, and since all the preparations hitherto used either have been inefficient or have presented certain disadvantages, I come now to a consideration of a preparation which I am convinced will revolutionize the treatment of anæmia. Inasmuch as there are objections to strong preparations, Dr. A. Gude, of Leipsic, Germany, realizing the great injury done to the teeth, also in constipating effect that the tincture of the chloride of iron has, set about obtaining a preparation which, while retaining all the therapeutic effects, should present none of the disadvantages.

His preparation is neutral in reaction, of an agreeable, non-astringent, mildly aromatic taste, being miscible with wine or milk.

It is a solution of manganese iron-peptone; as an organic combination of peptonates, here we have the digested albuminous compounds of iron, added to which is manganese, altogether making a most excellent specific in anæmia and chlorosis.

This preparation immediately passes through the alimentary ducts and is at once taken up by the blood; it is not a burden to the stomach to disturb digestion. I have found after using this preparation for one week its restorative influence upon the digestion and circulation, its prompt action being due to the happy combination of manganese with iron, thus infusing oxygen, iron and manganese into the blood, producing the red corpuscles.

I take much pleasure in presenting you the record of a few cases in which pepto-mangan (Gude's) was used:

Case I.—M. B., aged five years, had ben treated for subacute malaria for two months past. She complained of headache, dizziness, and languor; appetite poor; coated tongue; palpitation of the heart; has chills at times; the bowels are constipated, pulse weak; the muscles are flabby; the condition of the skin is pale, the veins are poorly filled, the mucous membranes are very pale, the lips white, the eyes sunken; the expression of the face is careworn and haggard. I ordered pepto-mangan, one drachm, four times a day, seven weeks after which she made a complete recovery.

II.—Miss R., aged seventeen years, schoolgirl. For the past two or three months she has been running a downward course; the mucous membranes of the eyes and lips are pearl color; the cheeks are devoid of color, pale, and careworn; there is loss of appetite, constipation, feeble, circulation; she has frontal headaches and dizziness, with slight cough;

the suggestion of food makes her feel sick at the stomach; the menstruation is scant and very irregular, with considerable pain. At times her mother says she is very irritable, crying for almost nothing; she is very easily frightened; during the day she grows drowsy and will lie down and sleep for an hour or two; in the afternoon she comes home from school tired and irritable and suffering from headache.

In this case I ordered pepto-mangan combined with liquor potassii arsenitis, or Fowler's solution; of the former two drachms, and the latter, one minim, four times daily. At the end of the first week there was slight improvement generally; at the end of the second week still improving, and at the end of the four weeks marked improvement. In nine weeks discharged with complete recovery.

Case III.—Miss V., a young lady, nineteen years of age, unmarried; the family history is excellent. She suffers with severe headaches, is sick at the stomach; loss of appetite, constipation; is extremely nervous; she faints easily; the menstruation is irregular and scanty; the circulation is poor, the extremities are cold; at times she has palpitation of the heart and is dizzy; the complexion is washed-out, pale, and care-worn; the lips are almost colorless. This case is more interesting, inasmuch as she had been under the care of several doctors and there was quite a difference of opinion. The specialist corrected the vision with glasses in hopes that the headaches would diminish, but without avail; sulphate of quinine had been used unlimitedly, Warburg pills, and, in fact, the treatment for malarial disease was vigorously used and no improvement was observed. Under the conditions I resolved to use pepto-mangan in tablespoonful doses, four times a day, in milk. Improvement made its appearance in less than a week; at the end of two weeks a most decided improvement, at the end of four weeks the headaches had disappeared, the appetite was excellent, the bowels were regular, the face was filled with animation and color, the lips were red, the eyes bright, and in eight weeks' treatment she made a complete recovery.

Case IV.—E. D. P., aged twenty-two years; single; sick one year; menstruation at thirteen, always irregular, recurring every three to eight weeks, lasting five or six days, and profuse. For the last six months she has had her periods every fourteen days; profuse; slight leucorrhœa; headaches at times constant, worse in the morning; dizziness, palpitation of the heart, fainting, shortness of breath on ascending the stairs, pain in the region of the stomach; appetite very poor; pain under the right shoulder; food distresses her; the bowels are constipated; the pulse is 88 weak, irregular; the lips are pale, the tongue is coated. Pepto-mangan (Gude's) was given in two-drachm doses four times daily; improvement showed itself in about a week; in two weeks was still improving, and at the end of six weeks she made a complete recovery.

Case V.—H. S. B., a schoolboy, fifteen years of age; pale and sickly for the past three months; no appetite; tongue coated; eyes dull and heavy; facial expression haggard and careworn, cheeks pale, lips devoid of color; extremities are cold; the circulation poor; the pulse weak and irregular. He complains of headaches after school, is sick at the stomach, dizzy at times, and very nervous, also irritable; has no desire for food; he likes candy and cake better.

In this case, pepto-mangan (Gude's) was ordered in one drachm doses five times daily. In about ten days improvement presented itself; in three weeks was still improving, and at the end of the seventh week he was discharged as making a complete recovery.

Case VI.—Mrs. M. S. P., a married woman, twenty-seven years of age, the mother of three children, the youngest five months old; quite advanced in the secondary stage of anæmia; she is unable to attend to her household duties, owing to her weak and generally run-down condition, having headaches, neuralgic pains about the shoulders; tired, at times sleepy; constipated; tongue flabby and coated; the menstruation absent since the birth of the last baby five months ago; has palpitation of the heart; the appetite poor; cooking makes her sick at the stomach.

She is pale, the facial expression haggard, the eyes are dull and sunken, the lips without color, the circulation weak, pulse irregular, and extremities cold.

Pepto-mangan (Gude's) was ordered in tablespoonful doses four times daily in sherry wine, and in a week's time the improvement was very marked, and in about nine weeks she made a complete recovery.

Case VII.—Mrs. A., aged fifty-two years, married, has had six children, the youngest twelve years of age. For the past two years her health has been failing, she having lost about eighty pounds. Her family history is good. The appetite had been poor for the past year and a half, bowels constipated; she began to show signs of mental derangement about a year ago, when nothing seemed to suit her; at times she would be herself; at night she was unable to rest or sleep, getting up and walking up and down the room, moaning. At times she would cry and moan for two or three hours at a time; this was usually in the morning. This state of melancholia was growing gradually worse, her so-called well spells getting shorter in duration. Suddenly she would go off into a crying spell, then moaning and sighing.

The circulation was weak, the pulse 110; the skin was dry and flabby; the eyes were dull; the facial expression was careworn and haggard; the tongue was coated and flabby; the complexion was waxy; the lips were without color and thin.

The liver being rather sluggish in its function, I gave a powder made up of hydrarg. chlor. mit., gr. iv; pulv. ipecac., gr. ⅛; pulv. zingiberis, gr. ⅛; salol, gr. ij; and sodii bicarbonat., gr. ij. This was given at bedtime, the following afternoon commencing upon a mixture of sulphate of codeine gr. ⅛, and pepto-mangan (Gude's), a tablespoonful, in a small wineglassful of sherry wine, four times a day.

During the first week the patient began to show slight signs of improvement, at the end of the second week still further improvement, and at the end of the first month her daughters were able to take her out for a carriage ride through the park, and this was the first time in thirteen months that she had been outside of the house. Her appetite is improving; the condition of the skin and complexion is much better, the eyes are brighter, the so-called bad spells are growing shorter, she rests and sleeps quietly through the night. Altogether the prognosis is most favorable to a complete recovery within the next two months.

Case VIII.—Miss R., aged nineteen years. She has been sick for the past three months; always well until this; complains of shortness of breath on exertion, palpitation of the heart, coldness of hands and feet; is tired most of the time; has fainting spells; she is regular in menstruation; has pain before the flow for three days; the flow is becoming more scanty and pale; appetite fair; bowels constipated; the skin and conjunctivæ pale; tongue coated, tremulous, and flabby; first sounds of the heart weak; tenderness over the liver, but no enlargement; pulse weak and irregular. Pepto-mangan (Gude's) in two-drachm doses five times a day was given, and in about nine weeks she made a complete recovery.

In concluding I might add that in the medical treatment of anæmia, also chlorosis, we find a specific in the combination of iron and manganese as prepared by Dr. A. Gude, and I congratulate him upon the excellence of the preparation, as it has proved a most efficient and valuable one.

The disadvantages in all other preparations of iron are obviated in pepto-mangan; in removing these disadvantages its therapeutic efficacy is not in any way impaired.

ABSTRACTS.

Penetrating Wounds of the Abdomen.

Monford (Bost. Med. and Surg. Jour., CXXXIII, No. 4, p. 81). The author has taken the cases recorded in the Massachusetts General Hospital for twenty-four years as the basis of this paper. In both shot wounds and stab wounds of the abdomen he is convinced that exploratory operation is almost imperative in all cases. Stab wounds rarely perforate the viscera.

In his series of cases there were nineteen stab wounds, in which the abdominal cavity was opened. They were all operated upon. Three died, a mortality of 15.7 per cent., but all three were unusually serious cases. In the first the external iliac artery was opened, and the man died of hemorrhage. In the second the spleen was lacerated. This patient might have recovered, possibly, had it not been that the first physician who examined him thrust his finger through the epigastric wound and explored the viscera: the man died of peritonitis on the ninth day. The third case was one of injury of the omentum and stomach, free hemorrhage and extravasation of the stomach's contents. This patient died of peritonitis on the third day. All the other cases, sixteen in number, recovered, but fifteen of these did not have penetration of the alimentary track.

The wounds were in all parts of the abdomen, inflicted with all kinds of cutting instruments, rusty needles, splinters of wood, razors, and stilettos. The omentum was frequently lacerated, and viscera sometimes protruded, and there were several cases of considerable hemorrhage, but in no cases where the gut remained sound were there any symptoms to cause alarm.

All that were operated upon since 1885 were thoroughly explored, the omentum frequently resected when it protruded, but whether returned or resected the patient always recovered. This emphasizes the safety with which the abdominal cavity may be opened for exploration.

There were also nineteen cases of gunshot wounds; twelve died, a mortality of 63.15 per cent. Of the twelve fatal cases five occurred prior to 1888, and were not operated upon. The seven since 1888 were operated upon. In all of these the viscera were perforated, and death was due to extravasation from the stomach and intestines, injury to the kidneys, or a wounded aorta, in every case, and this is also true of the stab wounds. Where there was extravasation into the general peritoneal cavity, whether or not the operation was done, the patient died. Including both stabs and gunshots, in six wounds of the stomach, four had extravasation and died. Of eight wounds of the small intestines, seven had extravasation with death. Extravasation and death occurred in all three wounds of the colon. There were two wounds of the spleen, both fatal, and four wounds of the liver resulted in the same way. The aorta was wounded once, and the external iliac once; both cases died. The kidneys were wounded twice; both cases died. But in twelve cases—eight stab wounds, four gunshot—the abdominal cavity was opened without injury to the viscera, and every one of these cases recovered rapidly and completely. Two of the perforations of the stomach following gunshot wounds recovered, and this is probably due to the movability of the mucous membrane of the stomach over a very loose submucous tissue. Where a small hole is penetrated through the stomach, the mucous membrane acts like a valve, the muscles promptly contract, and it becomes almost impossible for extravasation to take place. Of nineteen cases with free hemorrhage into the peritoneum, eleven died; but in nine of these cases there were serious wounds of the viscera as well. In two only could death be directly attributed to hemorrhage.

Treatment, as a rule, was begun in from one to three hours. Most of the cases were in shock or collapse, and died in a few hours. But two of the fatal cases were not in collapse on their entrance to the hospital. A great majority of the cases of collapse had extravasation and no hemorrhage, and the author considers that this shock is really a complete systemic toxemia. As a result of the study of these cases, the author says that in cases of doubt we should operate. If there is hemorrhage or extravasation, it can be checked. If not, no harm will have been done. In summing up, he says:

Gunshot wounds show a much higher mortality than stab wounds, but those stab wounds which penetrate the viscera show an equally high mortality.

Wounds of the small intestines are usually fatal.

Wounds of the stomach may be survived.

Exploratory incision in doubtful cases is the course of least danger.

Barring hemorrhage, early death after the accident is not from shock, but sepsis, because this is seen only when the fatal extravasation takes place.—Am. Med. Surg. Bulletin.

Synopsis of Cases of Appendicitis Treated During the Year in the Pennsylvania Hospital.

I. R. C. Admitted fifth month, 16th, 1894. Male, white, Italian, laborer, age 15 years. No history of a previous attack. Sick for nine days prior to admission. Cœliotomy was performed a few hours after admission, and an abscess was found in the region of the appendix, entirely shut off from the general abdominal cavity by dense adhesions. In the abscess there was found a round worm twelve inches long. The appendix was not found. Recovery.

II. D. L. Admitted sixth month, 14th, 1894. Male, white, Italian, age 7 years. Died a few hours after admission. Autopsy showed a large diffused abscess in right iliac region. Appendix could not be found.

III. D. L. Admitted sixth month, 21st, 1894. Male, white, Russian, age 43 years. Had a distinct history of a previous attack some years before. No operation allowed. Treatment, calomel in fractional doses, with the application of belladonna and mercury ointment under a flaxseed poultice to the region of the right iliac fossa. Recovery.

IV. I. S. Admitted sixth month, 23d, 1894. Male, white, Russian, age 57 years. Had been sick about one year before his present illness, a bowel trouble, the nature of which could not be determined. He had been sick for a week when admitted to hospital. Declined operation. Treatment, fractional doses of calomel, belladonna and mercury ointment underneath a flaxseed poultice to right side of abdomen. Insisted on going home five days after coming to hospital. He was slightly improved when discharged.

V. J. B. Admitted sixth month, 29th, 1894. Male, white, American, age 10 years. No history of previous attack. Had been sick about one week with vomiting and purging. Was in very poor condition on admission. Cœliotomy was performed the day after admission. An abscess cavity was found in the right iliac fossa. The pus had a distinctly fæcal odor. At the bottom of the abscess the appendix was found. It was gangrenous, and there was a perforation in it. The boy never reacted from the operation and died several hours after it.

VI. M. C. Admitted seventh month, 3d, 1894. Female, white, American, age 11 years. Eight days previous to admission this little girl received a blow on the abdomen in falling from a swing. Had had intense pain in the right iliac fossa, and her bowels had not moved since the accident. Cœliotomy was performed immediately after admission. Incision made in right iliac fossa. On opening the peritoneum a large gush of pus occurred. The appendix was not found. A fæcal fistula formed in the site of the wound but closed completely before she was discharged from hospital.

VII. J. H. P. Admitted seventh month, 7th, 1894. Male, white, American, age 28 years, shoemaker. No history of a previous attack. Six days previous to the admission he was kicked in the right side of the abdomen. Since then had been constipated and had much pain in the region where he was kicked. Cœliotomy was performed immediately after admission. Incision made in right iliac fossa. As soon as the peritoneum was open there was a rush of very foul smelling pus. The appendix was found at the bottom of the abscess cavity. It was gangrenous, contained an enterolith, and was perforated in two places. The appendix was four and one-half inches long. Recovery.

VIII. C. J. C. Admitted seventh month, 17th, 1894. Male, white, American, age 39 years; foreman. No history of a previous attack. Ten days previous to admission he had eaten a large quantity of chestnuts. Since then had suffered from intense pain in right side of abdomen. Cœliotomy was performed immediately after admission. Incision made in right iliac fossa. On opening the peritoneum a large quantity of foul pus welled up. Appendix was found in the abscess. It was gangrenous, but there was no perforation. Died nine days after operation from exhaustion.

IX. W. L. Admitted ninth month, 8th, 1894. Male, white, Irish, age 34 years. Three years ago had an attack of appendicitis. For three weeks prior to coming to hospital he had suffered from diarrhœa, with pain in right iliac region. No discoverable cause for his illness. A distinct mass could be felt in the region of the appendix. Treatment, calomel, in fractional doses, with the application of belladonna and mercury ointment under flaxseed poultices to right iliac region. Recovery.

X. C. S. Admitted twelfth month, 12th, 1894. Male, white, American, age 22 years, lineman. No history of a previous attack, although for two years he had suffered from vague attacks of pain in the right iliac region. Present illness began four days before admission, when he had an attack of vomiting just after a heavy meal. Cœliotomy was performed the day after admission. Incision made in right iliac fossa. A large abscess filled with very foul pus was found. The appendix was gangrenous and contained five perforations. It was removed. Recovery.

XI. I. Z. Admitted twelfth month, 15th, 1894. Female, white, Russian, aged 21 years. No history of a previous attack. Had been sick one week before coming to hospital. Cœliotomy was performed the day after admission. Incision made in right iliac fossa. An abscess cavity full of very foul pus was opened, and in it was found the appendix which was much inflamed and had one perforation. Recovery.

XII. J. C. Admitted twelfth month, 30th, 1894. Male, white, English, aged 32 years; cook. No history of a previous attack. Had been constipated for one week prior to admission, and, during this period, had taken much purgative medicine. Had persistent vomiting and hiccough for two days previous to admission. Cœliotomy was performed a few hours after admission. Incision made in right iliac region. When the abdominal cavity was opened there was a gush of foul pus. There was a large abscess to outer side and behind the ascending colon, extending nearly up to the liver, and containing in its centre the appendix, which had sloughed at its extremity so as to have a free opening. There was another abscess cavity filled with excessively foul pus jus below the cæcum, and extending down into the pelvis. The appendix was removed. Patient died the following day from exhaustion.

XIII. P. T. Admitted first month, 9th, 1895. Male, white, Irish, age 41 years. During the last three years he suffered every few months from attacks similar to the present. There was a distinct mass in the region of the appendix. Declined operation and insisted on leaving hospital. Unimproved.

XIV. M. M. Admitted second month, 21st, 1895. Female, white, American, age 24 years; domestic. No history of previous attack. Present illness began one week before admission. Cœliotomy was performed one week after admission. Incision made in right iliac region. The appendix was found in the centre of a large abscess. It was gangrenous, and was removed. The right Fallopian tube contained pus and was also removed. Recovery.

XV. A. R. L. Admitted second month, 26th, 1895. Male, white, American, age 38 years; laborer. Has had two attacks of appendicitis before. Illness began the day of admission with severe abdominal cramps. Cœliotomy was performed the day after admission. An abscess cavity filled with very foul pus was found in the region of the appendix, but the appendix itself could not be found. Died three days after operation from exhaustion.

XVI. O. L. Admitted third month, 15th, 1895. Male, white, American, age 26 years. Has had a number of attacks of appendicitis. Came to the hospital while in good health. Cœliotomy performed the day following admission. Appendix was found somewhat thickened and indurated. No scars and no enteroliths were found in it. Recovery.

XVII. D. S. Admitted third month, 26th, 1895. Male, white, Russian, age 46 years. Has had several attacks of appendicitis before. He had been sick four days before coming to the hospital with constipation, pain in abdomen, and vomiting. Cœliotomy was performed a few hours after admission. Incison made in right iliac region. All the tissues about the appendix were bound down tightly by old adhesions. There was a large amount of reddish serous fluid in the abdominal cavity in the immediate neighborhood of the appendix, and also much inflammatory lymph. The appendix was two and one-half inches in length, twisted, walls much thickened and covered with inflammatory lymph. It was closely adherent to the tissues surrounding it, very red, and appeared to have been the seat of much previous inflammation. The appendix was removed. Died fourteen days after operation from exhaustion.—Annual Report, Pennsylvania Hospital, 1895.

The Surgical Treatment of Retro-Deviations of the Uterus.

Dr. Augustin H. Goelet, of New York (in a paper presented at the N. Y. State Medical Society), believes that many of the operations designed for retro-deviations of the uterus, are unnecessary and irrational. The objection to Alexander's operation is the time it consumes and the prolonged convalescence it entails. Both ventro-fixation and vaginal fixation substitute an abnormal position and leave the organ fixed. When the uterus is movable, opening the peritoneal cavity to overcome a displacement is not justifiable if a cure can be effected without it. This should, he thinks, be reserved for those cases where the organ is fixed in an abnormal position by firm adhesions which cannot be otherwise overcome, and in these cases the uterus should be suspended from the anterior abdominal wall, not fixed to it. This secures the organ in a nearly normal position of anteflexion, and it is fairly movable.

Vaginal fixation has been given undeserved attention in this country. Its originator, Mackinrodt, has abandoned it. When it is more generally known that the fixed abnormal position which results, offers a serious impediment in pregnancy when it supervenes and complicates labor, it will cease to be recognized as a legitimate procedure.

Where the uterus is movable, Goelet dilates carefully, curettes the cavity, and inserts a straight glass drainage tube which serves the purpose of a splint and keeps the uterus straight. The vagina is then tamponned with iodoform gauze in such a manner as to throw the organ temporarily into a position of anteversion. Subsequently, a vaginal pessary is made to take the place of the tamponade. The tube is retained in the uterus for a week during which time the patient is confined to bed, but it is removed every day and the cavity is irrigated to remove mucus and clots which may be retained. When the patient is permitted to get up, the tube is permanently removed and a vaginal pessary is employed for a while to maintain the uterus in a correct position until the normal tone of its walls and supports is restored.

When the adhesions are not very firm or extensive they are broken up by manipulations under anæsthesia without opening the peritoneal cavity, and the case is then treated as one of movable displacement.

This seems a rational procedure since it aims at a cure of the metritis and endometritis, the maintaining cause of movable displacements; re-establishes a normal position of the uterus, and leaves it movable. It is entirely free from risk if thorough asepsis is observed, and requires only a week's confinement in bed.

The uniform success which this plan of treatment has afforded in his hands, leads him to believe that the other more hazardous and complicated operations designed for retro-deviations, are generally unnecessary.

:o:

THERAPEUTICS.

Fatty Heart.—A Remedy.

A distinction must always be made between fatty heart and fatty degeneration of the heart, although it must be evident to those familiar with the physical changes occurring in cardiac disorders that the former gradually, but certainly, lapses into the latter. Fatty heart is nothing more than an abnormal accumulation of fat in the cardiac structures, crowding the muscular fibres until they become so enfeebled that they cease to functionate properly. The physical signs are apparent to the practised ear, and taking into consideration the general appearance of the subject, fatty heart may be readily determined by an examination of the pulse. Usually the pulse is small, compressible and occasionally intermits; for the most part, it is fairly regular as to rhythm, now and then runnig fast or slow with the least excitement. Placing the ear over the cardiac area, we observe a feeble first, and accentuated second sound and generally, this tendency to alteration in rhythm. The patient has fatty heart. but unlike cases of fatty degeneration of the heart, the subject may be wholly unconscious of the defect. As a general rule, he will admit only that he is a trifle "short winded" on exertion, but there is an absence of pain and no perceptible derangement of the circulation. On the other hand, fatty degeneration is always indicated by pain, which occurs in paroxysms, amounting at times to syncope, and an examination of the superficial arteries shows that they follow a tortuous course, thus interfering with the blood supply to the tissues; for the conditions found superficially are identical with those which obtain in the more deeply situated arteries. Fatty degeneration is, therefore, marked by well known constitutional symptoms, although, frequently the most careful examination will fail to discover any marked physical signs of physical degeneration, except that the heart-beat resembles the sound produced by a mechanical instrument, as for example, the tick of a watch. In addition to this, however, the cardiac action is slightly labored, with a feeble first, and accentuated second sound, resembling in this respect the conditions noted in fatty heart. On making a comparison of the subjects affected by these two maladies, however, there is marked contrast. Those suffering from fatty degeneration are thin and "flabby," while those suffering from an accumulation of fat in the organ are generally robust and stout, although, as previously intimated this condition too often lapses into fatty degeneration, the patients becoming debilitated from digestive disorders, when the flesh becomes soft and flabby. On the post mortem examination the distinguishing feature of fatty degeneration is discovered in the cardiac muscle, which contains small oil globules at the intersections of the striated portions instead of healthy tissue. Other symptoms might be described, but the above will be sufficient for present purposes.

The most effective remedy for fatty heart is prophylaxis, and this may be secured by proper attention to diet and hygienic measures; but as the physician seldom sees a patient in the early stages, or overlooks the predisposition to degenerative changes in patients who only consult him at irregular intervals, it is of importance to determine an efficient remedy when the symptoms are first brought to his attention for correction. A number of remedies have been brought to the notice of the profession for the purpose of correcting this malady, but even now the deaths from cardiac failure are far too frequent and numerous to warrant us in deciding that treatment has attained perfection. Unfortunately, digitalis has not been displaced from the armamentarium of the general practitioner, a remedy which is generally contra-indicated, owing to its action upon the arterial system. By the administration of digitalis, extra work is thrown upon the cardiac muscle, already in an enfeebled condition, and while the patient may show evident signs of improvement during the early treatment, there comes a time when, through paralyzation of the cardiac ganglia, digitalis and its derivatives do irreparable harm. Cactus grandiflora and its glucoside, cactin, have been highly recommended; arsenic is extolled by some; but so far, no remedy has proven so useful as strychnine or some of its numerous salts. Still, the salts of strychnine do not fully meet the difficulty, for the reason that even in medicinal doses many patients are unable to bear them for any considerable length of time, when they must be temporarily discontinued. A combination of strychnine and arsenic is an ideal remedy, and is found in strychnine arsenite, the dose of which may be proportioned to suit the demands of the patients. This combination has the added advantage of being indicated from a physiological standpoint, although originally strongly advocated by Dr. Burggræve, the originator of Dosimetry, on purely empirical grounds. The dose ranges from one one-hundredth to one-thirtieth of a grain every four hours. Clinical reports are solicited on this comparatively new remedy.—The American Therapist.

Liebreich's Cure for Tuberculosis.

A series of experiments, reported in Bulletin, della reale Accad. med. di Roma, Anno IV, Fasc. 6, with Liebreich's cure for tuberculosis—viz., the injection hypodermically of cantharidate of potassium—leads to the following conclusions:

1. The injections are very painful and the pain is only partly prevented by cocaine.

2. Doses of 0.0001 milligramme are not dangerous, but doses of 0.0002 milligramme are distinctly so, and for that reason should be used only in advanced cases, the patient being kept under careful observation, especially as regards the uro-genital functions and the chemical and physical properties of the urine.

3. The injections are positively contra-indicated in very advanced cases of pulmonary tuberculosis.

4. In incipient tuberculosis the remedy seems to relieve the cough, to make expectoration easier, and to modify for the better the condition of the bronchial mucosa. The night-sweats and the general condition are also improved at this stage of the disease.

5. The remedy has no influence upon the course of the fever, nor the exhaustion; these remain unchanged.

6. Liebreich's "cure" always acts harmfully on patients who are troubled with hemoptysis. They grow worse almost invariably and the hemorrhages very easily recur under the influence of the remedy.

7. Tubercular ulcerations of the larynx remain unchanged, unless they are just beginning, when they show some tendency to clear up and granulate.

8. No influence is exerted on the number of bacilli expectorated from the lungs.

9. The injections easily give rise to annoying, sometimes serious disturbances of the uro-genital apparatus, dysuria, hematuria, albuminuria, and to the presence of renal casts in the urine.

On the whole, Liebreich's method of cure is too often harmful and too seldom beneficial for its problematic advantages in certain cases ever to lead to its general introduction. (Translated by Dr. James J. Walsh.) —Univ. Med. Magazine.

The Danger of Thyroid Feeding

Dr. Béclère (La Semaine Médicale), finds that excellent as are the results of the thyroid treatment, it is nevertheless attended with certain risks. The thyroid juice, when ingested in large quantities, acts as a poison on the heart, as is proved by the sudden deaths which have supervened after ingestion of the thyroid gland of sheep.

I have says Dr. Bèclère, administered fresh thyroid glands of sheep to a monkey, with the result that the animal died within ten days; and it has been reported that an adult and even one or two children subjected to a similar treatment for therapeutical purposes also died suddenly. Accidents of this kind show the necessity of exercising the utmost care and vigilance in respect of the thyroid treatment. The pulse is the best indication of threatening danger, and should be examined attentively every day.

It is very advantageous, especially at the beginning of the treatment, to keep the patients in bed or at least in their room, and enjoin their abstaining from any effort or movement apt to induce increased labor on the part of the heart. These precautions, moreover, should be kept up even after the treatment has been suspended, inasmuch as the thyroid juice appears to have the same cumulative effect as digitalis.—Medicine.

Proper Time to Use Medicines.

The Medical and Surgical Reporter gives the following advice as to the best time to administer acids, alkalies and other classes of remedies: Alkalies should be given before food. Iodine and iodides should be given on an empty stomach, when they rapidly diffuse into the blood. If given during digestion the acids and starch alter and weaken the digestion. Acids, as a rule, should be given between the digestive acts, because the mucous membrane of the stomach is in a favorable condition for the diffusion of the acids into the blood. Acids may be given before food when prescribed to check the excessive formation of the acids of the gastric juice. By giving it before meals you check the osmosis stomachward of the acid-forming materials. Irritating and dangerous drugs should be given directly after food, such as the salts of arsenic, copper, zinc and iron, except where local conditions require their administration in small doses before food. Oxide and nitrate of silver should be given after process of digestion is ended; if given during food, chemical reactions destroy or impair their special attributes and defeat the object for which they were prescribed. Metallic salts, especially corrosive sublimate, also tannin and pure alcohol, impair the digestive power of the active principle of the gastric juice, so should appear in the stomach during its period of inactivity. Malt extracts, cod-liver oil, phosphates, etc., should be given with or directly after food, so that they may enter the blood with the products of digestion.

Neuralgia.

Dr. G. H. Seagrave has for the last five years been in the habit of using hypodermatic injections of cocaine in lumbago, sciatica, pleurodynia, all forms of muscular rheumatism, and also for neuralgia of the head and face. For all, except neuralgia of the head and face, he injects from ¼ to ½ grain (0.015 to 0.03 gramme) over the seat of pain; for the two latter he injects into the arm. In a very large percentage of cases the result is most striking. The pain disappears almost entirely for some hours, to return in a much milder form. He continues the injections so long as the pain lasts. (Provincial Medical Journal, December, 1895.)

For Broncho-pneumonia in Children.

℞ Sodii benzoatis . . . . gr. viii
Ammonii acetatis . . . . gr. xxiv
Spiritus Vini Cognac . . . . f ʒ ij
Misturæ acaciæ
Syrupi simplicis . . . . aa f ℥ jss
S. From one-half to one fluid dram every two hours.

—Marfan, Rev. Internat.;
Ctblt. f. d. ges. Therapie. xiv, 2.

Ozone in Whooping Cough.

The Bulletin Medical of January 8, reports twenty-two cases of whooping cough treated with inhalations of ozone. It acted immediately in diminishing the frequency, the length and severity of paroxysms; it shortened the course of the disease remarkably and the general health improved at once, although the cases treated were all severely attacked.

Special Milk for Infants.

Dr. Edmund Cautley, of London, has had a special milk for infants prepared by taking an equal quantity of mixed cows' milk and a 10 per cent. solution of lactose, the whole being passed through a separator so arranged that the two outgoing streams are equal. It is thus divided into two equal parts, one of which contains practically the whole of the cream and may be termed cream milk, while the other contains practically no cream and may be termed skimmed milk. That the cream milk closely resembles human milk will be seen by the following table:—

	Cream Milk.	Human Milk.
Total solids,	13.11 per cent.	13.20 per cent.
Proteids,	1.82 "	2.00 "
Fats,	4.02 "	4.00 "
Lactose,	6.88 "	7.00 "
Ash,	0.39 "	0.20 "

The milk was well taken and digested by infants, but it was found that the percentage of fat was higher than some of them could digest, and this was reduced to 3.7 per cent. with excellent results. The milk is supplied in air-tight bottles and is previously pasteurized at a temperature of 160° F. (71.1° C.). It is rendered faintly alkaline.

The advantages of a milk-supply of this nature are, according to the author, numerous and obvious. 1. By the process of separation a large number of deleterious substances which accidentally contaminate milk — such as particles of manure, epidermal scales from the hands of the milker or the udder, hairs, dust, etc.—are removed. Needless to say, such constituents are very liable to be injurious to an infant. 2. By the process of Pasteurization the countless organisms present in milk are destroyed. It has been shown that a temperature of 160° F. (71.1° C.) destroys the bacilli of tubercle, typhoid fever, diphtheria, and many others. The liability of the transmission of disease to the infant by the milk supply is consequently abolished. 3. A substitute for human milk is supplied ready for use, and the trouble involved in the methods at present adopted is abolished.

An infant weighing 3000 grammes (= 6½ pounds) would require of this milk during the first week 30 grammes (1 ounce); second week, 37 grammes (1¼ ounces); third week, 44 grammes (1½ ounces); fourth week, 51 grammes (1¾ ounces). During the second month the amount may be increased gradually by a quarter of an ounce a week, the total amounting to 3 ounces (93 grammes) by the end of the ninth week. From the age of nine weeks to six months from 3 to 4 ounces (93 to 125 grammes) are sufficient for a feed, and from six to nine months from 5 to 6 ounces (155 to 186 grammes) are enough. After the second month six or seven feeds may be given in the twenty-four hours at intervals of three hours. When the child is first put upon this milk it is advisable to give it diluted for a few days in order to gradually accustom the stomach to the change in diet. This is especially necessary in the case of children under three months of age, on account of the difference in the relative proportion of proteids from those of human milk. (Lancet, January 11, 1896.)—The Universal Medical Journal.

The Pathology and Treatment of Uraemia.

Hughes and Carter (Amer. Jl. Med. Sci.), publish the conclusions of a research with regard to the toxic element in uræmia. They found that the injection of blood serum and urine from cases of Bright's disease, in which uræmia had not been a symptom, did not produce uræmia, but a certain degree of nephritis was discovered if the dogs were killed. If blood serum or dropsical effusion from a case suffering from uræmia were injected, symptoms were produced in the dog so definite, so uniform, so closely analogous with the symptoms of human uræmia that it could not be doubted that they were due to uræmia arificially produced. In the kidneys of such dogs there was found a uniform and constant condition, a more advanced form of the disorder observed after the introduction of serum from cases of Bright's disease without uræmia. It was apparently a form of glomerulo-nephritis. Later experiments showed that healthy human serum produced nephritis in dogs of the same type as that produced by the serum or urine of Bright's disease without uræmia, so that the authors conclude that the substance producing nephritis is constantly present in human serum. Experiments on rabbits showed that it was present in dog serum, but not in horse serum; and the authors suggest that its formation may be prevented by a vegetable diet. The facts point to the digestive tract being the seat of origin of the poisonous substance. As to the nature of the poison, the authors are only able to state that its power of producing uræmia is destroyed, or very much lessened by a moderate degree of heat, and that it is not readily dialysable, that is to say, the fluid obtained by dialysis was capable of producing some nephritis, but not uræmia. With regard to treatment, the authors point out that severe nervous symptoms are least likely to occur in those cases in which diarrhœa exists; they suggest, therefore, the advisability of the administration of purgatives, preferring those of vegetable origin, since calomel is very liable to produce mercurial salivation. Since the perspiration of uræmic patients frequently contains large quantities of urea, it is possible that other excrementitious substances may also be excreted by this channel. If pilocarpin be given to encourage perspiration, its effects must be watched with great care. The authors prefer the hot pack. The hot air bath is not free from danger, especially in pyrexial cases, and they mention one case in which fatal hyper-pyrexia followed its use. As the poison is contained in serous effusions as well as in the blood, and as reabsorption of these effusions may cause the entrance of enough of the poison into the blood to induce uræmia, they counsel strongly early resort to tapping. Free venesection, they say, "cannot be too highly recommended." Its good effect is best seen in grave cases. Marked dyspnœa is the most urgent indication, but cerebral symptoms also call for it. A weak pulse does not forbid it, as the pulse may strengthen while the blood is flowing. The quantity withdrawn must depend upon the special character of the case, and the effect produced; probably from 20 to 40 ounces. In some cases venesection appears to abort a threatened attack. Venesection may be supplemented by transfusion of normal saline solution. The injection of the fluid into the subcutaneous tissues, whence it is very rapidly absorbed, in the great majority of cases yields as good results as intravenous injection.—Brit. Med. Jour.

PROCEEDINGS OF SOCIETIES.

THE PROCEEDINGS OF SEVENTH ANNUAL MEETING TRI-STATE MEDICAL SOCIETY OF ALABAMA, GEORGIA AND TENNESSEE.

(Concluded from March Journal).

R. R. Kime read a paper on

SYNTHETIC PERINEOTOMY IN LACERATIONS OF THE PERINEUM.

using the term to designate a method of dividing and dissecting without loss of tissue. The redundancy is due to hyperplasia, a subinvolution which will disappear as soon as the cause, the laceration, is removed.

The method was described and cases cited.

W. E. B. Davis said that there was more in the man being familiar with the operation he employed than with any particular operation. It was important to diagnose between perineal tears and those of the posterior vaginal wall.

W. E. B. Davis read a paper on

BILE IN THE PERITONEAL CAVITY AND HOW TO DEAL WITH IT.

He presented an experimental and clinical study of the subject. The experiment confirmed the position taken before the American Medical Association in 1892. The constant contravasation produced peritonitis unless there was satisfactory drainage. A considerable quantity would be walled off just as any other irritating material. It was noted that where gauze was packed around the openings in the gall bladder or ducts that the animal recovered as a rule. The field of operation was generally walled off completely and there was no evidence of general peritonitis. Numbers were re-opened in 24 to 48 hours and this condition found. He took the position that in obstruction of the common duct for stone that an incision should be made, the obstruction removed and drainage established without an attempt being made to close the opening in the duct as these cases will not stand long operation as a rule.

R. J. Trippe, of Chattanooga, reported several cases of illustrating the necessity of early operation and also the technique, and the fact that some will die no matter when operated on.

These two papers were discussed together.

R. R. Kime said that many cases of appendicitis would get well without operation but which it was very difficult to tell. By use of salines and disinfectants many can be relieved by unloading the colon, relieving the hyperæmia and establishing drainage. If a case is progressing nicely for several days and gets suddenly and seriously worse, then operate without delay. Would advise against removal of appendix where an abscess cavity is opened which is walled off from the general peritoneal cavity.

C. Holtzclaw had had 15 or 16 cases, but had never been called on to operate. They recovered with an ice pack over the inflamed area. Operation should be performed if any evidence of suppuration, elevation of temperature or collapse.

G. A. Baxter, said that the danger was not in operation but in delay. The question lies in the diagnosis between obstructive and catarrhal appendicitis. When we have a distinct enlargement, and induration and enlargement there is obstruction.

R. M. Cunningham said that Dr. Davis was departing from his former teaching as he had maintained that normal bile would not produce peritonitis.

In a large number of postmortems the appendix was not found diseased once in a hundred times. Operation is indicated where there is pus, swelling and induration.

J. P. Stewart always cures his cases with salines. He related a case of injury to the gall duct followed by distention of the gall bladder. He aspirated and got 5 pints of pus and bile, a few days later 2 pints and again 1 pint; the obstruction then gave way and the same fluid passed per rectum.

J. B. Murfree said that no operation should be made for appendicitis unless there was some indication such as recurrence or gross local changes.

Dr. Sims did not recall a case of death from appendicitis which had not been operated on. It might be required, but swelling and obstruction did not indicate an operation.

In regard to appendicitis Telamon, of Paris, had published statistics giving 90 or 95 per cent. of cures without operation; an eminent English authority had published similar statistics, whether these were reliable or not, he did not know. Many claim that when one has had an attack of appendicitis he has a constant source of danger in his belly. A few years back this was the main indication for operation and in this view it seemed that the operation should be performed at any opportune time.

Dr. Davis thought the case of Dr. Stewart one of cyst, not a distention of the bladder. It was saved by the treatment. The after treatment was the same as in other cases of abdominal surgery. He thought catarrhal cases of appendicitis were common. When there is obstruction there is pain. Each case should be treated on its merits. Some need operation. In general septic peritonitis the patient will die even if operated on.

THIRD DAY

J. R. Rathmell, of Chattanooga, read a paper entitled

ACROMEGALY; REPORT OF A CASE.

He stated that Paul Marie first described the disease in 1886, his theory being that the enlargement of the pituitary gland was the cause of the disease. In the case reported with the symptoms common to the disorder there were two uncommon symptoms. These were long continued abnormal rhythm of the Cheyne-Stokes variety, and the inability to retain food or drink on his stomach for 3 months before. Both symptoms were accounted for by the enlarged pituitary body which weighed 475 grains instead of 5 or 10 normally. The author believes the disease to be one of trophic origin producing changes in the bony system, especially of the feet, face, and hands, that the enlargement of the pituitary body and other ductless glands was the result, not the cause of the disease.

W. C. Townes, of Chattanooga, read a paper on

ACROMEGALY

exhibiting specimens from Dr. Rathmell's case, the enlarged pituitary body and a part of the ileum with a diverticulum. He reported a case now under treatment, a marked feature of which was that although 52 years old there was no impairment of the sexual function. He believed the disease to be due to the pressure on the brain from the enlarged pituitary body.

W. G. Bogart said that these cases were rare. He had seen Dr. Rathmell's case. The enlarged tongue made articulation difficult. The labored breathing gave evidence of suffering. The points of interest were the length of time required for the development of the disease, 14 years, and the question whether any thing could be done if the diagnosis were made early.

E. A. Cobleigh askd if it were not possible that the condition was a persistent accentuation of a normal process and if so the cause. He reported a case exhibiting some of the symptoms.

J. Berrien Lindsley said that the paper was an evidence that the profession was advancing and in this respect second to none. A disorder was under discussion, the name of which was not in the dictionaries.

J. R. Rathmell said that the first evidence of the disease was loss of strength and enlargement of the extremities. He believed it a disease of the osseous system, especially of the feet, face and hands, but affected the whole bony system just as we have a pseudo-hypertrophic muscular paralysis. The line of treatment was to build up the system and electricity. He had got some comfort from the latter.

J. B. Cowan, of Tullahoma, Tenn., read a paper on

WATER VERSUS ATMOSPHERE, THE CAUSE OF MALIGNANT MALARIAL FEVER.

and related observations where water from clear springs was evidently the cause of malaria. One case there were two springs connected underground, the upper was healthful while those who used the lower had the disease. A marsh between the two formed a nidus for the development of the miasm. In almost every instance where well and spring water had been abandoned for cistern water malarial fever had disappeared. In a village supplied by a well had the disease, except one family, and they used cistern water. So many similar cases had come under his observation that he invariably changed the water in his malarial cases. If sterilized water were used malarial fever would be unknown.

E. T. Camp could not agree that malaria was taken in the water alone. Some of the poison might be so absorbed, but it was said that in the tropics one would get a chill by sleeping in the open air. He believed it was taken mostly through the air.

C. Holtzclaw differed from Dr. Cowan, and related a case where there was no improvement on removing the patient to non-malarious location.

W. G. Bogart said that water was one of the means of introducing the poison, but not the only means. In a certain neighborhood where different waters were used all were affected whether they were cleanly or not.

Y. L. Abernathy observed that when we have a wet summer we do not have much malarial fever. The paper seemed conclusive that we get the disease from water, but why don't we have it every summr, and why don't we have it all the time? Bowling's theory was that it was due to water confined, so as to prevent evaporation. The old theory was that it was due to heat, moisture and decomposition; the recent theory was that it was due to a germ. Whichever is correct, it is true that $\frac{19}{20}$ of the diseases of the West and South are due to malaria, so that we have to give quinine, iron, arsenic, mercury, etc.

Dr. Cowan said that the reason we did not have the disease every summer was because the heat did not develop the germ. All cases of malignant malarial fever were due to drinking water. In parts of the South where formerly prevalent, but now unknown, it was due to the use of cisterns. In one case a party camped several years on a lake and had malaria every year, but subsequently escaped when they took their own water, although sleeping in the open air as before.

J. Berrien Lindsley, of Nashville, presented a paper on

PREVENTION OF SMALLPOX.

He did not believe that one-fourth of the people of Tennessee were vaccinated.

Doctors were not willing to acknowledge their inability to diagnose the disease, hence mistakes occur. In Little Rock smallpox was under way six weeks before its nature was discovered. A rule of Sanitary Boards is that in cases of doubt to give the public the benefit of the doubt and isolate the case. All suspicious cases should be sent to some public institution. He related several cases where undiagnosed smallpox resulted in spreading the disease and causing death.

H. Berlin said the micro-organism of smallpox was not yet discovered and we were left to empiricism. Jenner had done more for the race than Napoleon with all his wars. In the Franco-Prussian war more French soldiers died from smallpox than were killed in battle. The disease was unknown in the German army, as the soldiers had been vaccinated.

Dr. Lindsley said that the reason smallpox was dangerous was because of the neglect of vaccination. The fear of the disease did not exist when he started in the profession. Doctors did not do their duty in the matter of insisting on vaccination.

E. T. Camp, of Gadsden, Ala., read a paper on

A COMPLICATED CASE OF OBSTETRICS WITH RUPTURE OF THE UTERUS.

It was a transverse presentation. The child was asphyxiated, but resuscitated. The placenta not being delivered in an hour, chloroform was administered, the hand introduced into the uterus and the rupture discovered. The placenta was adherent, but torn away and morphine administered, but death took place an hour afterwards. He thought that rupture took place before the version and was spontaneous. If the placenta could have been gotten away and contraction induced the patient might have been saved.

Y. L. Abernathy thought it possible if a laparotomy had been performed.

W. G. Bogart said that the three interesting points were 1st, the time of the rupture, 2d, the cause, 3d, the absence of symptoms. We would expect to have all the well marked conditions of shock. The strange thing was that there was no pain, loss of blood or shock. With the complications, malpositions, adherent placenta and rupture of the uterus with bad surroundings death was inevitable.

J. P. Stewart thought the patient died from hemorrhage, not from shock. A post-mortem would have been of interest.

D. S. Middleton, thought that the adherent placenta indicated a diseased structure, and this caused the rupture. The administration of chloroform opened the mouths of the vessels and death was from hemorrhage.

C. Holtzclaw said that the only chance was to sew up the rent after doing a laparotomy.

J. R. Rathmell said that having a general adherent fibroid placenta the only thing was to let it alone and remove the entire uterus.

G. A. Baxter thought that an operation should have been performed quickly, and the operator governed by circumstances after opening the abdomen.

R. M. Cunningham thought the doctor did the best to conserve his own reputation. The case would have died any way. To be in line with modern surgery an operation should have been performed.

Dr. Camp said there was nothing in the condition to indicate the rupture until the discovery was made. In a similar case he would not operate, as the adherent placenta would have produced death later.

R. H. Hayes, of Alexander City, Ala., read a paper on

THE NUCLEINS AND THEIR RELATIVE POSITION IN THERAPEUTICS.

The nucleins are protoplastic or bioplastic cell substance, the bioplastic or primal unit of the organism; the cell life vital or resistant force, a proteid granular cell life substance in which all animal nutrition takes place. The nucleins are proteid bodies residing in the tissue cells and the yeast of certain plants (animal and yeast nuclein). The former taken from the blood and lymphoid glands of the body residing principally in the polynuclear blood corpuscles or leucocytes, the proliferation of which they have the power of increasing (leucotytosis). They are natural defenders, arresting and overwhelming all alien or disease germs as they enter the blood stream. Vaughan and McClintock have developed them. They are gotten up in three forms, nuclein solution from yeast of certain plants, vegetable; nuclein solution from the tissue of the body, thymus, thyroid, liver, spleen, etc., animal; from the tissue direct, protonuclein. The principal difference between the antitoxines is that the toxines antidote or antagonize the poison or ptomaine formed by the alien or disease germ and they belong to the class of albumen serums, and they attack the disease germs direct as soon as they enter the blood stream. The nucleins are more direct if less powerful and have the advantage of attacking through the leucocytes, all germs entering the system. Reports are encouraging from eminent men.

The author reported an ulcer of 16 years' standing cured in four months.

Another case of ulcer of the ankle (both nontubercular) very greatly relieved in same time. He favors from limited experience more general application of the nucleins.

G. W. Drake endorsed the use of nucleins on theoretical grounds and intends to use them and await results.

C. Holtzclaw cited the transfusion of blood as the use of nucleins; salt water does as well. The Valentine meat juice injected near an ulcer was found beneficial, but water does better. The whole business was an advertising scheme. These preparations should be under the control of the government.

R. P. Johnson read a paper on

TREATMENT OF DIPHTHERIA.

and gave his experience with established methods especially the use of benzoate of soda. He read a letter from Prof. Klebs who did not write favorably of the antitoxine treatment, but claimed better results with antidiphtherine. Dr. Johnson described a method of steaming the patient with quicklime to loosen the membrane, by covering the patient with a sheet.

G. A. Baxter said the danger was from sepsis and the germs were under the membrane and could not be reached by local applications. In a case treated here the membrane liquefied under the antitoxin treatment. Where death was from obstruction which might extend to all parts of the lungs no agent would liquefy the membrane quick enough.

Geo. Thrash said Prof. Klebs, in a paper before the profession at Asheville, did not seem to be very enthusiastic about the serum treatment.

Y. L. Abernathy said that there were cases so mild as to need no doctor and some so severe as to need no doctor. The membrane is not dangerous until it gets into the trachea, and then the case generally dies.

Tracheotomy is the only thing that promises anything, and it is generally a failure.

The following were read by title:

When Consumptives Should Go to Colorado and Why? J. C. Minor.

The Diagnosis of Incipient Phthisis. L. P. Barbour.

Some Simple Procedures in Tedious Labor. R. M. Harbin.

Uric Acid as a Factor in Disease. E. van Goidtsnoven.

Sympathetic Ophthalmia. Frank Trester Smith.

The following officers were elected: President J. B. Murfree, Murfreesboro, Tenn.; vice-president, R. J. Trippe, Chattanooga; R. R. Kime, Atlanta; R. H. Hayes, Union Springs, Ala.; treasurer, Geo. R. West, Chattanooga; secretary, Frank Trester Smith, Chattanooga. The next meeting will be held in Nashville, Oct. 13, 14, and 15, 1896.

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MEDICAL NEWS AND NOTES.

An appeal sent out by the Cornell Brain Association, of Boston, Massachusetts, to moral and educated persons to bequeath their brains to the institution for scientific study, is rather interesting, and, according to the American Medico-Surgical Bulletin, eight brains have already been received and as many more been promised for future delivery. It is not always easy to determine whether the brain belongs to a moral person in life; it would be interesting to note whether pathology will contribute to that end.

New York city has appropriated $20,000 for the purpose of erecting public baths. Let us hope that the "great unwashed" will avail themselves of all the privileges of the city's munificence.

Dr. John S. Billings, whose work as the editor of the Indexed Catalogue of the Library of the Surgeon General's Office, U. S. Army, has long ago become famous and well known to the whole medical world, has been appointed the Director of the Consolidated Libraries by the trustees of the Consolidated Library of the City of New York. The appointment is one which will meet with the heartiest commendation from the whole educated world.

It is said that the Russian Government has made an annual grant of $50,000 to the Medical School for Women in St. Petersburg. Let the good work go on, and when the women are sick let them continue to send for their male confreres.

The medical department of Vanderbilt University consists of ten professors and twenty instructors, lecturers and assistants. Dr. William L. Dudley is Dean of the Faculty, and Dr. Richard Douglass, Secretary; Dr. W. N. L. Coplin has the chair of pathology and bacteriology.

The William Pepper Clinical Laboratory was opened and presented to the University of Pennsylvania on December 4, 1895.

Examinations for license to practice medicine in the City of New York will be held in New York city, Albany, Syracuse and Buffalo, on April 7th to 10th, May 19th to 22nd, and June 16th to 19th. The morning hours are from 9:15 until 12:15; and the afternoon hours from 1:15 until 4:15. On Tuesday mornings anatomy, afternoons physiology and hygiene; Wednesday mornings chemistry, afternoons surgery; Thursday mornings obstetrics, afternoons pathology, and diagnosis; Friday mornings therapeutics.

The Jefferson Medical College in Philadelphia has established a four years' graded course. The Faculty are to receive a salary, and the chairs of ophthalmology and pathology have been added. The Alumni Association has pledged itself to equip the pathological department by raising $10,000.

Dr. Horton Sinkler reports in the Therapeutic Gazette, the successful suture of the musculo-spinal nerve three months after its complete division. The operator was Dr. Keene. Persistent treatment by galvanic electricity for five months was rewarded by the complete restoration of the functions of the limb.

Saul, of Berlin, claims that boiling catgut in alcohol does not insure its complete sterilization, and that the addition of water is necessary to accomplish this result. His mixture consists of ethylic alcohol 85 parts, carbolic acid 5 parts and water 10 parts, at a temperature of 172° F., in which the catgut is rendered sterile in five minutes' time.

The hospital of the Protestant Episcopal Church, Philadelphia, has received a bequest supposed to amount to $3,000,000, from the estate of Mrs. A. R. Aspinwall, of Pittsburg, who died in Edinburgh, Scotland, in December.

The special committee appointed at the last meeting of the Medical Society of the State of New York, to report upon the most feasible plan by which the present methods of introducing medical expert testimony can be improved, submitted the following report:

Your committee recognizing the difficulties which lay in the way of formulating any plan within the constitution of the state, have corresponded quite extensively with qualified members of both the legal and medical professions, and believe that in submitting the following preamble and resolution, it presents a concensus of such opinions held with reference to this subject, which under present constitutional restrictions affords the best method of obtaining medical expert testimony.

Whereas, The present method of obtaining medical expert testimony tends to lessen the value of such testimony and to bring the medical profession into disrepute; therefore be it

Resolved, That the Medical Society of the State of New York would recommend the enactment of a law by the legislature providing for the appointment of experts by the courts, and that only physicians of repute in the particular branch of medical science to which the question calling for expert opinion relates, shall be appointed; that the function of the experts so appointed shall be advisory, and the number thus appointed shall be such as to adequately represent the court, and both sides of the question at issue, as in the judgment of the court shall seem necessary; that the experts so appointed shall have full and free access to all the evidence in the case, as well as access to the plaintiff or defendant in person as the case may be, if the issue involves his mental or physical state. That the expert shall submit to the court for transmission to the jury a report in writing, setting forth their conclusion and the facts in evidence on which such conclusion is based; that the cross-examination of such experts shall be limited to the facts and opinions embraced in their tesimony as embodied in their report, and that their compensation shall be fixed by the court at a rate that is reasonable for professional services of such a nature.

Respectfully submitted,

J. B. Ransom, M.D., E. D. Fisher, M. D.,
Carlos F. McDonald, M. D., S. B. Ward, M. D.,
H. E. Allison, M. D., Committee.

Griffith's New York Journal of Cutaneous and Genito-Urinary diseases for September, 1895, reports a case in which a man 65 years of age, after prolonged exposure to cold, had his hair turn from white to black within a few hours. We have not yet seen any report of a mistake in regard to this, and yet the occurrence is so much out of the usual experience that considerable time and careful watching would be necessary to make us look upon it as an assured fact. The change from white to black is not unusual as the result of well known chemicals, but the weather has never yet been classed among these.

At the regular monthly meeting of the New York State Board of Health, held at the Hotel Métropole, New York city, February 28th, Dr.

T. O. Donohue, the chairman of the Committee of Tuberculosis, presented an exhaustive report on the work accomplished in the way of destroying diseased animals since July 15, 1895. The report states that 527 bovines suffering from tuberculosis were destroyed since the date named; that $12,282.25 have been paid out in awards to the owners of the cattle. The greatest slaughtering of diseased cattle was done in Dutchess county, but many animals were also destroyed in Westchester and Putnam counties. The appropriation last year for the work of the committee was $30,000, but Dr. Donohue says this sum is not enough. The secretary's report stated that there were 900 fewer human deaths in January, 1896, than in January, 1895, and fewer than in the four years preceding. "There was an increase," the report says, "in the mortality from typhoid fever, scarlet fever and measles, and diarrhœal disease. There were nearly 600 fewer deaths from acute respiratory diseases and 100 fewer from consumption and nervous diseases." Dr. S. Case Jones, submitted a report on the typhoid fever epidemic in Elmira. There were, between January 3 and 28, 87 cases of typhoid fever reported in Elmira. Seventy-seven cases were in families using the city water for domestic purposes, and the remaining 10 cases were among children who used the city water in the schools. Dr. Jones said that the State Board of Health should enforce the law to prevent the pollution of rivers by sewers, and that the authorities of Elmira should insist that the drinking-water from the Chemung River should be filtered before distribution.—Medical News.

Dr. Joseph Jones, one of the most prominent members of the medical profession of this continent, died at his home in New Orleans on the 17th instant. He was a graduate of the University of Pennsylvania in 1855, and almost immediately thereafter was made professor of chemistry at the Medical College of Savannah, Ga., and filled this and associate chairs in the University of Georgia, the University of Nashville, and Tulane University at New Orleans in rapid succession. Since 1868 he has been identified with the latter, giving liberally of his time and remarkable talents to the service of his city and state. To him more than to all others is due the improvement of the sanitary condition, not of New Orleans alone, but of the whole valley of the Mississippi. His ability as a scientist and historian was perhaps more widely recognized abroad than in this country.—Medical News.

The St. Louis Health Department makes free microscopic examinations of sputum for tubercle bacilli. The Health Commissioner asserts that certain doctors send specimens to the Health Department for examination, and then charge their patients $5 each for this. Such a proceeding does not seem right to the Health Commissioner, and is not in accord with medical or other ethics. When a government, however, undertakes the job of providing free examinations free medicines, free inspections, free vaccinations, free disinfections, etc., it must expect some friction before the state of perfected paternalism is reached.—Maryland Med. Journal.

Starving the Army Medical Staff.

The official advertisement issued by the Director-General from the War Office states that: An Examination of Candidates for Seventeen Commissioner of the Army Medical Staff wil lbe held at the Examination Hall, Victoria Embankment, W. C., on the 7th February next, and the following days. The official list of successful candidates at this examination received by us from the War Office, and published in another column, contains only nine names. This is a very serious deficit, and one which the Minister for War might be asked to explain. There must be something very radically wrong with War Office methods when the present moment of national awakening to the importance of all matters connected with the defence of the empire the medical staff of the army fails to attract more than a fraction over half the number of medical officers it needs. When will the War Office and the Horse Guards learn that the way to get "good doctors" is to treat those they have as on an equal footing with the other special departments of the service, and to clear away all the abuses which have grown up around the medical department and its headquarters.—Brit. Med. Journal.

We hereto append the preliminary programme of the sixty-third annual session of the Medical Society of the State of Tennessee, to be held at Chattanooga, Tenn., April 14, 15 and 16, 1896:

1. "Fractures at the Upper Extremity of the Radius, with Cases," by Dr. B. B. Cates, Knoxville.

To open discussion—Drs. G. Baxter, Chattanooga, and W. B. Rogers, Memphis.

2. "Diseases of the Accessory Cavities of the Nose," by Dr. G. M. Peavler, Bristol.

To open discussion—Drs. Frank Trester Smith, Chattanooga, and G. H. Price, Nashville.

3. "Some Observations on the Therapeutic Actions of Ergot," by Dr. W. C. Bilbro, Murfreesboro.

To open discussion—Drs. M. L. Bradley, Saddlersville, and S. S. Duggan, Unionville.

4. "Posterior Urethritis," by Dr. J. W. Handley, Nashville.

To open discussion—Drs. W. F. Glenn, Nashville, and G. W. Seay, Nashville.

5. "Retroflexion of the Uterus, with Report of Cases," by Dr. G. B. Gillespie, Covington.

To open discussion—Drs. R. Douglas, Nashville and Hazel Padgett, Columbia.

6. "Immediate Amputations," by Dr. T. J. Happel, Trenton.

To open discussion—Drs. Duncan Eve, Nashville, and C. A. Abernathy, Pulaski.

7. "Croup," by Dr. G. W. Moody, Shelbyville.

To open discussion—Drs. J. A. Witherspoon, Nashville, and J. W. Brandeau, Clarksville.

8. "A Review of the Past and Present Pathology and Treatment of Uterine Displacements," by Dr. J. S. Nowlin, Shelbyville.

To open discussion—Drs. W. D. Haggard, Nashville, and W. K. Sheddan, Williamsport.

9. "Report of a Case of Neurotic Bladder Trouble, and Subsequent Pyelonephritis, Relieved by Nephrotomy," by Dr. J. B. F. Dice, Morristown.

To open discussion—Drs. J. W. Handley, Nashville, and W. K. Vance, Bristol.

10. "Gastric Dyspepsia," by Dr. K. S. Howlett, Bigbyville.

To open discussion—Drs. J. S. Cain, Nashville, and J. A. Crook, Jackson.

11. "The Use of the Bicycle," by Dr. Hazel Padgett, Columbia.

To open discussion—Drs. S. W. Sanford, Union City, and G. D. Hayes, Shelbyville.

12. "Cancer of the Breast," by Dr. S. S. Crockett, Nashville.

To open discussion—Drs. J. R. Buist, Nashville, and G. W. Drake, Chattanooga.

13. "Professional Fads and Faddists," by Dr. W. K. Sheddan, Williamsport.

To open discussion—Drs. N. T. Dulaney, Bristol, and J. B. Cowan, Tullahoma.

14. "Constipation," by Dr. S. T. Hardison, Lewisburg.

To open discussion—Drs. J. S. Nowlin, Shelbyville, and K. S. Howlett, Bigbyville.

15. "Fissura in Ano," by Dr. A. B. Cooke, Nashville.

To open discussion—Drs. J. L. Watkins, Nashville, and C. Holtzclaw, Chattanooga.

16. "The Germ Theory of Disease," by Dr. C. M. Sebastian, Martin.

To open discussion—Drs. H. Berlin, Chattanooga, and Larkin Smith, Nashville.

17. "Sprained Ankles," by Dr. J. L. Crook, Jackson.

To open discussion—Drs. S. S. Briggs, Nashville, and C. L. Lewis, Nashville.

18. "Mastoid Diseases," by Dr. N. C. Steele, Chattanooga.

To open discussion—Drs. L. B. Graddy, Nashville, and G. M. Peavler, Bristol.

19. "Medio-bilateral Lithotomy," by Dr. C. S. Briggs, Nashville.

To open discussion—Drs. Paul F. Eve, Nashville, and B. B. Cates, Knoxville.

20. "Repair of Round Ligament of the Uterus vs. Production of Artificial Ones," by Dr. M. C. McGannon, Nashville.

To open discussion—Drs. T. J. Crofford, Memphis, and G. B. Gillespie, Covington.

21. "The Rational Treatment of Typhoid Fever," by Dr. J. A. Crook, Jackson.

To open discussion—Drs. A. M. Trawick, Nashville, and T. R. Moss, Dyersburg.

22. "Surgical Operations in the Aged," by Dr. C. A. Abernathy, Pulaski.

To open discussion—Drs. J. B. Murfree, Murfreesboro, and R. J. McFall, Cumberland City.

23. "Anomalies of the Umbilical Cord," by Dr. W. S. Scott, Dickson.

To open discussion—Drs. J. Bunyan Stephens, Nashville, and H. J. Warmuth, Smyrna.

24. "Cesarean Section," by Dr. R. Douglas, Nashville.

To open discussion—Drs. W. G. Bogart, Chattanooga, and C. E. Riscine, Knoxville.

25. "The Art and Mystery of Medicine," by Dr. B. D. Bosworth, Knoxville.

To open discussion—Drs. G. W. Moody, Shelbyville, and C. M. Sebastian, Martin.

26. "Surgery of the Pancreas," by Dr. Paul F. Eve, Nashville.

To open discussion—Drs. C. S. Briggs, Nashville, and J. W. Hill, Knoxville.

27. "Hypertrophy of the Prostate," by Dr. W. F. Glenn, Nashville.

To open discussion—Drs. J. B. F. Dice, Morristown, and J. L. Crook, Jackson.

28. The Importance of Complete Post-partum Uterine Contractions, for the Safety of the Mother," by Dr. J. R. Buist, Nashville.

To open discussion—Drs. M. C. McGannon, Nashville, and C. W. Womack, Chapel Hill.

29. Treatment of Injuries of the Brain," by Dr. D. Y. Winston, Clarksville.

To open discussion—Drs. L. P. Barbour, Tullahoma, and T. C. Murrel, Winchester.

30. "Report of a Case of Gall Stones," by Dr. T. R. Moss, Dyersburg.

To open discussion—Drs. A. J. Swaney, Gallatin, and I. A. McSwain, Paris.

31. "Pernicious Malarial Fever," by Dr. C. W. Womack, Chapel Hill.

To open discussion—Drs. W. C. Bilbro, Murfreesboro, and W. S. Scott, Dickson.

32. "Treatment of Hemorrhoids," by Dr. H. R. Coston, Fayetteville.

To open discussion—Drs. A. B. Cooke, Nashville, and C. Brower, Nashville.

33. "Vaginal Hysterectomy," by Dr. T. J. Crofford, Memphis.

To open discussion—Drs. R. Douglas, Nashville, and M. C. McGannon, Nashville.

34. "Sciatica," by Dr. R. J. McFall, Cumberland City.

To open dscussion—Drs. W. A. H. Coop, Lawrenceburg, and W. A. Atchison, Nashville.

35. "The History of a Lawsuit," by Dr. C. Holtzclaw, Chattanooga.

To open discussion—Drs. D. E. Nelson, Chattanooga, and E. L. Deaderick, Knoxville.

Presidential Address—Dr. G. C. Savage: "Medical Progress: Its Helps and Hindrances."

We give the preliminary "press notice" of the twenty-first annual session of the American Academy of Medicine, to be held at Hotel Aragon, Atlanta, Ga., Saturday, May 2nd, and Monday, May 4th, 1896, as it has been sent to our journal.

The proprietors of the Aragon have made special rates for those who attend the meeting; it is confidently expected that the concession for one and one-third fare for the round trip granted to the American Medical Association will be available in time for those who desire to attend the opening session; a very pleasant excursion can be arranged to start from Philadelphia and visit Asheville, N. C., the "Land of the Sky," and Chattanooga, en route to Atlanta, if a sufficient number club together for that purpose; or special Pullman cars can be chartered for the exclusive use of those who attend the meeting for the direct route to Atlanta from any rendezvous selected. The secretary invites correspondence on any of these topics, and also from those who may desire a copy of the completed programme, when it is issued; full information will be promptly given on any of these subjects.

OUTLINE PROGRAMME.

The Academy will meet in executive session with closed doors on Saturday, May 2d, at 10.00 A. M. The open session for the reading of papers will begin at about 11.00 A. M., there will be a recess for lunch from 1.00 to 2.30 P. M. The "Reunion Session" and annual dinner will be held on Saturday evening. An executive session will be held on Monday morning after which special discussion on "Methods of Medical Education" will be the order of the day. The Association of American Medical Colleges, and the Confederation of the State Boards of Medical Examiners and Licensers have accepted the invitation of the Council and will participate in this discussion. The time-table for the day and the time for adjournment will be determined by the circumstances.

Note. No attempt is made to arrange the papers in the order in which they are to be read.

PAPERS PROMISED.

1. "Laboratories and Hospital Work." The President's Address. Henry M. Hurd, M. D., Baltimore, Md.

2. "Colonies for Epileptics." Frederick Peterson, M. D., New York city.

3. "Insanity in the South." J. T. Searcy, M. D., Tuscaloosa, Ala.

4. "Tuberculosis in Public Institutions." J. W. Babcock, M. D., Columbia, S. C.

5. "Vivisection." George M. Gould, M. D., Philadelphia.

6. Subject not yet given. Woods Hutchinson, M. D., Iowa City, Ia.

7. "The Confusion of Pharmacy Relating to the Theory and Practice of Medicine." Elmer Lee, M. D., Chicago.

8. "A National Board to License for the Practice of Medicine." Henry Leffmann, M. D., Philadelphia.

9. "Report of the Committee to Abstract the Laws Regulating the Practice of Medicine and to Suggest a Model Law." Pery H. Millard, M. D., Chairman, St. Paul, Minn.

10. Homicide." Paul Bartholow, M. D., Philadelphia.

AM. ACAD. OF MED. PRELIM. NOTICE 2.

11. "The Sociologic and Scientific Attitude of the Medical Profession." W. J. K. Kline, M. D., Greensburg, Pa.

12. "A Study of some of the Distinguishing Features of the Homo Medicus." Charles McIntire, M. D., Easton, Pa.

DISCUSSION ON "METHODS OF MEDICAL TEACHING."

This discussion will be opened by a series of ten minute papers and, in the open discussion to follow, each speaker will be limited to five minutes. The opening papers are as follows:

13. "The Preparatory Mental Discipline for the Medical Student." F. H. Gerrish, M. D., Portland, Me.

14. "The Lecture and its Uses." Charles B. Penrose, M. D., Philadelphia, Pa.

15. "Text-book Recitation and its Advantages." DeLancey, Rochester, M. D., Buffalo.

16. "Laboratory Methods." V. C. Vaughan, M. D., Ann Arbor, Mich.

17. "Clinical Teaching for Graduates in Diseases of Children." J. Madison Taylor, M. D., Philadelphia.

18. "The Seminary Method.' Bayard Holmes, M. D., Chicago.

19. "Examinations." E. L. Holmes, M. D., Chicago.

20. "Students' Medical Societies." Roswell Park, M. D., Buffalo.

21. "State Examination." J. McPherson Scott, M. D. (of the Maryland Board of Examiners), Hagerstown, Md.

22. "The Best Method to Teach Anatomy." John B. Roberts, M. D.,, Philadelphia.

23. "The Best Method to Teach Physiology." Charles D. Smith, M. D., Portland, Me.

24. "The Best Method to Teach Practice." J. C. Wilson, M. D., Philadelphia.

25. "The Best Method To Teach Surgery." J. S. Wight, M. D., Brooklyn.

26. "The Best Method to Teach Obstetrics." J. C. Edgar, M. D., New York city.

27. "The Best Method to Teach State Medicine." George H. Rohe, M. D., Catonsville, Md.

Correspondence is pending about some additional papers; if any more are promised, the titles will appear in the completed programme.

Charles McEntire, Secretary,
Easton, Pa.

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REVIEWS.

The American Year-book of Medicine and Surgery. Being a Yearly Digest of Scientific Progress and Authoritative Opinion in all Branches of Medicine and Surgery drawn from Journals, Monographs, and Text books of the Leading American and Foreign

Authors and Investigators. Collected and arranged with Critical Editorial Comments by J. M. Baldy, M. D., C. H. Burnett, M. D., Archibald Church, M. D., C. F. Clarke, M. D., J. Chalmers Da Costa, M. D., W. A. N. Dorland, M. D., V. P. Gibney, M. D., Homer W. Gibney, M. D., Henry A. Griffin, M. D., John Guitéras, M. D., C. A. Hamann, M. D., H. F. Hansell, M. D., W. A. Hardaway, M. D., T. M. Hardie, B. A., M. B., C. F. Hersman, M. D., B. C., Hirst, M. D., E. Fletcher Ingalls, M. D., W. W. Keen, M. D., H. Leffmann, M. D., V. H. Norrie, M. D., H. J. Patrick, M. D., William Pepper, M. D., D. Resman, M. D., Louis Starr, M. D., Alfred Stengel M. D., N. G. Stewart, M. D., and Thompson S. Westcott, M. D., under the General Editorial Charge of George M. Gould, M. D. Profusely Illustrated with Numerous Wood Cuts in Text and Thirty-three handsome half-tone and colored plates. Philadelphia: W. B. Saunders, 1896. Pp. vi-17 to 1183. [Price, . .6.50.]

During the last few years the generous rivalry among the medical publishers has frequently resulted in one or another work of peculiar and especial interest to the profession at large. For a number of years a well known annual, equalled in its number of volumes only by the extent of the information contained therein, has deserved and commanded an extensive patronage from medical men. This year a new publisher, with a single volume of almost 1,200 pages, enters the field and offers a great deal to wean a part of this patronage.

The preface gives better than we can do the "general design" of the work, which is "to give physicians in a compact form an annual epitome of the new and progressive medical truths or suggestions published during the months of the preceding year from July to June inclusive. It is at present almost or entirely impossible for the specialist, even as regards his own department, to keep himself conversant with the tremendons literature in all languages and in a thousand periodicals." The editor goes on then to draw a distinction between a "summary of medical progress" and the "'literary review of all published matter," and adds briefly that he has not attempted the latter problem. Indeed, he says, "Thousands of excellent articles have not even been mentioned, because our task has not been to epitomize our knowledge, not to review text books (unless containing original researches, new suggestions, and so on), or to abstract articles not written for the sake of new truth. We have aimed only to mention those ways that are or may be contributary to the progress of medical science and art." One more prominent truth is in this same part of the book brought out. He says: "Judicial criticism is also desirable, not only to select and summarize, but also to pronounce decisions upon proposals and to prevent useless experiments upon others. A mere colorless heterogeneous mass of abstracts from the medical literature, leaves the average reader bewildered or in the position of an amateur experimenter. Without being too dogmatic, it has been the aim of the departmental editors to pass such needed judgment upon new suggestions or upon matters in dispute."

The extent and importance of this work justifies us in giving a resumé of its contents, with the names of the authors who are responsible for the subjects contained. General medicine is cared for by William Pepper, M. D., and Alfred Stengle, M. D., both of Philadelphia; surgery by W. W. Keene, M. D., and John Chalmers Da Costa, M. D., both of Philadelphia; obstetrics by Barton Cook Hirst, M. D., and W. A. Newman Dorland, M. D., of Philadelphia; gynæcology by J. M. Baldy, M. D., and W. A. Newman Dorland, M. D.; pediatrics by Louis Starr, M. D., and Thompson S. West, M. D., of Philadelphia, Pa.; nervous and mental diseases by Archibald Church, M. D., and Hugh J. Patrick, M. D., of Chicago, Ill.; dermatology and syphilis by William A. Hardaway, M. D., and C. Finley Hersman, M. D., of St. Louis, Mo.; orthopedic surgery by Virgil P. Gibney, M. D., and Homer W. Gibney, M. D., of New York City; ophthalmology by Howard F. Hansel, M. D., of Philadelphia, Pa., and Charles F. Clark, M. D., of Columbus, Ohio; etiology by Charles F. Burnett, M. D., of Philadelphia, Pa.; diseases of the nose and pharynx by E. Fletcher Ingalls, M. D., and T. Melville Hardy, B. A., M. D., Chicago, Ill.; pathology and bacteriology by John Guitéras, M. D., and David Riesman, M. D., of Philadelphia, Pa.; materia medica, experimental therapeutics and pharmacology by Henry A. Griffin, M. D., and Van Horne Norris, M. D., both of New York City; anatomy by C. A. Hamann, M. D., of Cleveland, Ohio; physiology by J. N. Stewart, M. D., of Cleveland, O; hygiene jurisprudence and chemistry by Henry Leffmann, M. D., of Philadelphia, Pa.

The amount of information contained in the book is surprising and extensive. Most of the plates are excellent, though the illustrations are often mediocre. Were we to attempt to go into the details of a single one of the sections, it would carry us considerably beyond the limits of the space placed at our command. We can only say that in a great many ways the book is of exceeding value, giving as it does in brief the results of the best literature for the year, and in addition to this the individual opinion of a very able department editor in regard to the value of such selections. To give an idea as to the matter of discrimination, we turn to infectious diseases, under the head of pediatrics, and we find that the subject of diphtheria occupies more space than everything else relating to pediatrics. The editor explains this by saying that "during the year activity in all branches of pediatric work has given way to the experimental investigation of the claims of the new remedy of diphtheria antitoxine. The literature upon this subject has been enormous, and all other subjects have been neglected. It is the topic of the year, and has demanded at our hands space commensurate with its importance." We do not believe that there is to-day a subject of more vital interest to the race than the question of serum therapy, and, of course, that part of it relating to diphtheria bears no unimportant relation to the whole.

The publisher seems to have been not in the least reluctant to go to any expense in the matter of illustrations, in order to facilitate the understanding of the text, and to put the reader abreast of the new and ingenious instruments that would be available in one or another condition. Of course, many of these illustrations have been borrowed in all probability from the journal in which they originally appeared; but it is not at all unusual to find illustrations which have been made specially for this work. Orthopedic surgery receives but scant attention, seven pages in all, and this is the more interesting as last year was especially prolific in orthopedic literature.

With the changed orthography throughout the work we are not at all in sympathy—the dropping of final e's, the omission of diphthongs in a number of words to which we believe they belong, and a few other peculiarities which may be in harmony with certain views entertained by lay periodicals, but which certainly do not seem to appeal to the educated and scholarly medical man.

An exceedingly important part of any book, the index, seems to have received especial attention; it is full, accurate, and conveniently arranged in the simplest possible manner.

We do not hesitate to say that we expect to have the work within easy reach for constant reference.

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JOURNALISTIC JOTTINGS.

Another new journal has made its appearance, new in more ways than one. It represents a new school for post-graduate instruction, indeed, may be called the organ of the Clinical School of Medicine, a new institution founded on some of the lines which have been followed so successfully by the two other well known schools of some years' standing devoted to instruction only of graduates in medicine. It is entitled the Clinical Recorder, and its editor is William S. Gottheil, M. D. Its salutatory says that an explanation would be an apology for its existence; that its purpose is merely to furnish a practical record of clinical events, "which shall be useful to the general practitioner and interesting to the specialist. With this, and nothing else, in view, we make our bow, and with it begin a most earnest struggle for professional approval." We trust that the journal will not depart materially from the purposes and plans for which it has been founded. We only hope that the clinical records will not be confined to brilliant successes, but will give, so to speak, a mirror of the work done by the men, either in the institution or in private practice.

Volume I, No. 1, of a somewhat bulky, but well ordered magazine entitled State Hospitals' Bulletin, a quarterly report of clinical and pathological work in the State hospitals for the insane and their pathological institute, published by authority of the State Commission in Lunacy, is before us for notice. Its "ratio esse," according to its own announcement, arises from the fact that the ten State hospitals of New York State care for and treat over 12,000 insane patients, and by the consolidated system with New York City's more than 7,000 insane added, there will be almost 20,000 patients under the care of nearly 3,000 persons employed by the State. There are 91 physicians engaged in the medical service of these hospitals, not including those engaged in the pathological department, and not including the consulting physicians and surgeons of the several hospitals. The editors, ex-officio, are the President of the State Commission in Lunacy, the Superintendent of the State Hospitals, and the Director of the Pathological Institute, the last named having been appointed by competitive examination since the issue of the Bulletin, Dr. Ira Van Gieson, an excellent and valuable acquisition both to the pathological department, and to the State service. The editorial committee are P. M. Wise, M. D., C. W. Pilgrim, M. D., and S. H. Talcott, M. D. The collaborators are, the assistant physicians and medical internes of the several State hospitals.

"The Bulletin is a public document only in the sense that it is published by the State. It is expected that the support it receives from subscriptions will relieve the State from any considerable expense. The subscription is purposely placed very low, in order to secure a wide distribution. No advertisements will be received or published in the Bulletin." It will be published quarterly at the Utica State Hospital. Subscription price, $2 per annum in advance, single copies, 50 cents. To the men engaged in this very important branch of medical work, the Bulletin will certainly be of material value and assistance. It may not be a place to find the latest coal tar product, with elastic testimonials as to its value, but it will probably contain a great deal of scientific material properly arranged and attractively put.

In our apology for our late appearance last month, we could have stated, had we at the time known it, that "there were others." Even after our late arrival, one of the representative journals of the West reached our table, but this journal is like its editor, always interesting, always attractive, and well worth waiting for. It is hardly necessary to mention that we refer to the Medical Mirror (of St. Louis).

The Virginia Medical Monthly announces that with its April issue it will cease to be a monthly, and will come out twice a month. The last year has been an important one for this journal. Its editor, Dr. Landon B. Edwards, will doubtless furnish us a journal just twice as interesting, if for no other reason than because it comes out twice a month.

The American Journal of Obstetrics opens the year with 32 extra pages. Washington City seems to have almost completely utilized its space for original communications. What has seemed to us to contain an unusual amount of information in a small compass, is the "Brief of Current Literature," which occupies the last 35 pages of the January issue.

In a former issue we had something to say in regard to the Medical Review. We are surprised to have the announcement that the editor has already withdrawn. We hope that this does not mean that the field so well furrowed by this new departure is to be left unfilled.

The Medical News not long since moved its publication office to New York City, and with its removal made a change in its editorship, the present editor being Dr. J. R. Goffe. This together with the American Medico-Surgical Bulletin, gives New York City four weekly medical periodicals. If we do not keep abreast of the times, it will not be for lack of energy, ingenuity and intelligence on the part of these several journals. The last mentioned seems to have made a special stride towards public approval. Although it lost a valuable associate editor, it has gained a no less worthy and well known writer in Dr. Egbert H. Grandin, who is now the associate editor.

We wish them one and all success, and we shall always be glad to find something of sufficient value in each to give our readers the benefit of the four publications.

GAILLARD'S MEDICAL JOURNAL.

A MONTHLY JOURNAL OF MEDICINE AND SURGERY

Scientia et Veritas Sine Timore.

M. E. GAILLARD, (PUBLISHER.)
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MEDICAL JOURNALS.

In our journalistic jottings of this issue, we had something to say of a number of medical publications, as different in their themes as in their times of issue. We often marvel that so many publications, covering practically the same departments, seem always able to gain sufficient support from subscribers and advertisers to warrant the expenditure necessary in putting them forth. It is always open to question whether or not the same amount of intelligence and money expended on publications already well known and fully deserving of increased patronage which the new publications gain, would not tend to the general improvement in journalistic literature, and as a result, increased information to the large class of readers. However, we are always fairly well convinced of the survival of the fittest, and it is with no little pride that we point to the many years of continuous existence which have marked the course of our own journal; to the high standard of medical thought, which has always characterized the course of its work; to its general freedom from the many disagreeable advertising dodges, which have sooner or later buried in oblivion journals of great promise; and finally, to the determination and unity of purpose that has marked its every effort from the outset to uphold the dignity of the profession, to advance the cause of medical knowledge, and to improve the capacity for doing good work for every reader of its pages. We, therefore, propose in the future to pattern on the past, to try to sift out of the vast quantity of medical writings that come to our eye that which is true, that which is promising, that which is good. If our subscribers will only remember that the best interests of the journal are subserved when most is contributed to their edification and pleasure, they will not be so reluctant to make known their wants and wishes, and we trust that they will find us not unwilling to put forth every effort to meet such demands. Another thing that must be constantly kept in mind, is that the composition of a journal must depend largely upon its constituents. Their wishes must be respected, their needs must be provided for, their wants must be reached as nearly as it is possible for those upon whom the responsibility devolves to measure and to foresee the same. Were an apology for a monthly issue necessary, it would be sufficient to say that the readers are saved the interminable task of eliminating from a perfect torrent of current literature that which is of little or no value to the ordinary general practitioner, and often worse than detrimental to a great many readers. It is not necessarily that which is new that is of especial value. Indeed, it has been well said that what is new is not true. It does not follow that because the proposition seems to have wonderful possibilities, it is any more likely to be founded upon true and abiding principles; so far from it, the fact that it is entirely contrary to the usual general experience of the scientific world, almost assures the improbability of its real worth; and thus we are left free to elect, after a due and careful consideration, that which has survived the test of actual practical trial; we are enabled to provide from the whole field of medical literature that which our subscribers can feel some certainty about applying in their daily work.

We do not deny that there are many ways yet to be learned in which we can advance the interests of our science and the knowledge of our readers; but we wish to assure them that our earnest effort shall be to as rapidly as possible discover new ways in which to furnish them the kind of information they desire. Unless the average man has time to make a business of reading journals, he can really not read carefully and thoroughly more than one weekly journal and one monthly journal; and we are not so sure that he cannot read one of these better than he can both. At all events, we shall be glad to hear from our subscribers when we fail to give them the full measure for a month's reflection.

SPECIAL ANAESTHETISTS.

Although the subject of special anæsthetists has been frequently broached in this country, and although the surgeons who are constantly doing considerable work in the large hospitals are continually finding fault with the manner in which the problem of anæsthesia is usually solved, we have yet to see established in this country with any degree of certainty or uniformity, the class corresponding to a similar class so well known in England, whose real business in the profession is the giving of anæsthesia. Probably the need does not appeal with so much force to occasional operators in small places, or in country districts; but we are quite sure that the safety of the patient and the security of the operator would both be materially enhanced if the anæsthesia were assigned to men specially qualified, if not entirely devoted to this work. Indeed, already in Brooklyn one hospital has taken the initiative and employs a practitioner who administers the anæsthetic for every operation. To those who are familiar with hospital work, either as internes or as visiting surgeons, it is unnecessary to go into any detail in this matter; but there are a great many who really do not know the amount of responsibility which is thrust upon the young graduate, who has either never given an anæsthetic or who has never even seen an anæsthetic administered, and who could not, by any possibility, be expected to administer the same as skilfully or as successfully as a man who had had some experience. As a matter of fact, just about the time that the interne becomes fairly familiar with the use of ether (they seldom in this part of the world become familiar with the use of chloroform), his advanced position on the staff removes him from his field of usefulness in this direction. This may not be the universal custom, but it is so nearly so that we can accept it as the general rule.

The two special features to be considered, are, first the patient, then the operator. From the patient's standpoint, it is a matter of considerable difference whether the same degree of narcosis is produced by double or by half the quantity of the anæsthetic. It is a matter of no little concern whether he awakens to find his tongue lacerated or punctured, and the angles of his jaw sore, tender, and remaining so for several days, or whether he comes out of his anæsthetic with only the ordinary disagreeable effects of the drug used. It doubtless makes considerable difference to his constitution whether it takes ten minutes or a half hour to produce anæsthesia, and whether it requires the sight of one eye or both to determine the degree of narcosis. To the operator in any operation it is a matter of considerable moment whether he is compelled to give his attention to one or both ends of the patient, especially if it be the "latter" end in question. It is no easy matter, as every experienced operator can aver, to be compelled from time to time to be looking out for the anæsthesia, and at the same time to look out for the operation. We would not like to say how often we have seen an operation abandoned for a considerable period, in order that the operator could make up for some bungling work on the part of the anæsthetist. It is bad enough when this is necessary from no fault on the part of an intelligent anæsthetiser; but where, as is often the case, simple ignorance necessitates the attention of all engaged for the resuscitation of the patient, it is little short of criminal. If, therefore, we ever hope to draw any reasonable and practical conclusions as to the effect of the different anæsthetics on the different organs—respiration, heart, kidneys, and so on—we must not only know thoroughly the history of the patient, but also the experience of the anæsthetist. The amount of the anæsthetic is easy to determine after it has been used; it is much more important to determine it before. In every city of any considerable size, or wherever the place is large enough to have a hospital in which operative work is constantly done, it does seem that it would not be a difficult matter to have one or two practitioners, whose business it would be to administer the anæsthetic.

TRAINED NURSES.

A number of questions are constantly coming up in regard to the trained nurses. In many parts of this country they are even yet hardly differentiated from the ordinary "go as you please" sick nurse. Their value to the patient and to the physician is never known so well to any class of people as to those who are constantly brought in contact with them. We would not dare to go into the details of their usefulness and nobleness, their efficiency, their ingenuity, their devotion to their work. Neither the space nor the time is at our command to point out at this moment some of the reasonable objections raised by patients when the question of a trained nurse is mentioned. The doctors, too, get, in many cases, at some facts that would seem to contra-indicate certain nurses rather than nurses in general. This matter is regulated in a large measure by the individuality of the nurse. We cannot here more readily than elsewhere do away with the personal equation.

The special subject about which we desire to speak at the present time is the question of their remuneration. We do not believe that they are ever paid too much, provided they are the highest type of their class; and if they are not, they are never paid too little. But we are unable to understand why truly good nurses will often refuse interesting, useful, instructive cases, that really cannot afford by any possibility to pay full prices; cases in which the doctor often refuses any remuneration at all; and yet, these same nurses will remain idle week after week, month after month in exceptional instances, vainly waiting for a rich case. We are always surprised to find how many of them have failed to realize that the rich cases are not always the most desirable cases; and while we would not urge a nurse to accept work of any kind at what they conceived to be a price below that which nurses are supposed to receive, provided a full pay case is in sight, yet we do insist that they often stand in their own light by not accepting good work that is offered at at least living wages.

A few years ago a certain sum a week for general cases was considered to be full pay; in certain special cases, more especially males, the price of another day was added, where it was thought the people were able to pay it. Now, no nurse who is a regular graduate desires any case for less than the price previously charged for the special class designated; and for this special class $3.00 additional is usually charged. Do not misunderstand us. A good nurse earns every dollar of this. We only offer a plea for some very good people, and some very pleasant people, and some honest people, who, according to our thinking, have every right to the best medical attention and good nursing, and yet who are unable to pay the fees usually charged.

PRIVILEGED COMMUNICATIONS.

The sanctity of the secrecy pertaining to knowledge gained by professional relations has been affirmed in a practical and potent way by an English jury in a case of which we only have, up to the present, abbreviated newspaper reports. The facts are about these: Mrs. Kitson, a sister-in-law of Dr. Playfair was attended by Sir John Williams for an illness that became of sufficient gravity to demand a consultant; and the brother-in-law was selected in this capacity. The lady's trouble did not seem compatible with her husband's absence of a year, and against her entreaties and protestations Dr. Playfair announced that he proposed to inform his wife as to the facts, so as to protect her against the society and companionship of an immoral woman. This he did, and an action for damages resulted in a verdict against Dr. Playfair for sixty thousand dollars. In the course of the trial Justice Hawkins asked Sir John Williams if he thought it the duty of the physician to inform the public prosecutor if it was found that the patient had submitted to an illegal operation. Sir John said the College of Physicians had answered "yes." "Then all I can say is that it will make me very careful in the selection of my medical men," said Justice Hawkins. Later in charging the jury the justice said that the theory that it was always the duty of a physician to inform the public prosecutor when he suspected that a crime had been committed was "simply monstrous."

We have given the case in brief as the very point is involved in which the legal counsel of one of the societies in this state gave an opinion which to our minds was entirely contrary to common consent and to the dictates of professional ethics. We have not the document at hand, but the effect was that in suspected criminal abortion cases, the coroner should be notified at the outset. Unless we are grievously mistaken, our patient's confidence is just as sacred when the illness is the result of criminal interference as when it is the sequel of unfortunate and uncontrollable accidents. Our duty is to restore health by the quickest and best means. The fact that we consider it necessary to get the exact facts in order to put the case upon a proper footing if it does become public property, makes all the more imperative the obligation to respect the patient's confidence. More than once a physician has sacrificed his own personal liberty to protect the reputation of his patient. By what means we are to protect ourselves and others, common sense must in the individual case be the guide; unquestionably, to prevent the commission of crime, public opinion and the law would justify unusual flexibility in the interpretation of the code; but we do not believe that the action of any jury in a similar case to the one cited would have been essentially different. If the recital of this case with its sequelæ does nothing else, it will emphasize the fact that information gained by professional relations cannot be too highly respected or too zealously guarded.

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ORIGINAL ARTICLES.

THE PATHOLOGY AND COMPLICATIONS OF HYDROCELE.

BY THOMAS H. MANLEY, M.D.

New York.

The derangement of function and finer structural changes which lead to hydrocele are not well understood.

Whether the serous fluid is the result of a low grade of local inflammation, or consecutive to pathological changes, is certainly a matter yet unsettled, although the weight of opinion is in favor of the former view.

The local changes in structure which we find point to degenerative changes of an inflammatory origin; thus we have as an accumulation, an exudation similar to what we find in inflammatory effusions in other serous cavities, with all those shades, gradations and neoplastic formation witnessed in any cavity the seat of inflammation.

In some instances we have evidence of a primary plastic adhesion between the visceral and parietal surfaces within the vaginal tunic; while in others the fluid is shut off in locules from the development of fibrous partitions succeeding the deposition and lamination of organized lymph. This type of hydrocele is well described in (Varieties of Hydrocele of the Tunica-vaginalis-testis,) and some anomalous states of the tunica-vaginalis. By Joseph Griffith, A.M., M.D., F. R. C. S. Journal of Anatomy and Physiology, 1893-1894, p. 291.)

He calls attention to the many apparent anomalies in the processus-vaginalis and tunica-vaginalis-testis. He cites four cases which he carefully examined (post mortem) in men who suffered no inconvenience from them during life. The history of these cases points to their pathological rather than to their anatomic basis.

Humphrey, in Holmes' System of Surgery, mentions bags of water which were multiloculated and each pouch connected with the peritoneal cavity.

Griffiths believed that as these multiloculated hydroceles were usually small they seldom underwent treatment. These evidently belong to the same class designated by Berard as, "Hydrocele-Diverticulaire," in some cases of which, by the injection of melted wax he was enabled to trace them to the peritoneal cavity. He believed that they were formed by a thinning and bulging of the tunica-vaginalis in places. The inflammatory character of the mutations leading to this type of scrotal ascitis with consecutive changes, has been decried because many of its clinical features are absent. Pain is seldom or never present until by weight and pressure a dragging on the cord and compression are experienced. The clinical evolution of this process is certainly unique, and this is what gives it its distinguishing characteristics which belong to no other serous cavity, though every observer knows that when senile changes begin especially in their regular order after middle life the sensations are more or less blunted, and what we designate as inflammation may advance to a dangerous degree before the salutary warning is given. The exudation of hydocele varies in quantity and quality.

A large number of the smaller varieties are borne unnoticed, and it is probable that a considerable proportion, perhaps provoked by various excesses or constitutional disturbances disappear spontaneously when these have been discontinued or removed. In those tapped the quantity removed has varied. From the celebrated historian Gibbon, Mr. Cline removed at one sitting something more than a gallon and a half. In Dujato's 1000 cases the quantity varied from 10 to 100 ounces. The composition of the withdrawn fluid varies. Spermatozoids entire and partly disintegrated have been found in the evacuated fluid of hydrocele. In the average fluid withdrawn we will find on inspiration cholesterine crystals. In one case from which Mr. Curling had withdrawn 570 grammes of fluid, he was able to extract 45 centigrammes of cholesterine. The source of this in hydrocele is obscure. Cholesterine is well known as a product of the decomposition of fat and is often found in cysts lined by epithelia as mammory or ovarian when it is assumed to be a derivative of metamorphosed epithelia. The fluid is of an alkaline reaction. Sir Wm. Ferguson and Vidal have both reported instances in which the fluid withdrawn was of a thick, white, milky consistence. In the former's case chemical analysis proved it to be an emulsion of fat. Vidal termed these "Galactoceles." It does not appear whether a microscopical examination was made as chemistry was alone resorted to in examinations of liquid sedatives until the last twenty-five years. It is my impression that these cases were probably first serous, then suppurative and finally by a free admixture of these with the alkaline secretions a chylificaton or saponification occurred producing the emulsion described. One case in my own practice seems to have been of the same class.

In May, 1887, Dr. N. C. Donahue of the dispensary service of Harlem Hospital, sent a case of hydrocele in for operation.

The patient was a man of 40 years of age, of good physique and apparently good general health. He was single, had gonorrhœa twice; never had stricture or orchitis. He stated that three months before, without any apparent cause, he noticed that his right testicle began to swell; it continued until it attained so great a size that he could only conceal it with difficulty. About the time while in a skating rink he sustained a fall after which this scrotal tumor began to give him more pain, but he was still able to work as a milkman by wearing a suspensory bag. Its size had diminished somewhat he believed since he had injured it, but an uncomfortable sensation remained, and now he came to have it tapped. This was undertaken in the dispensary department but it was found that nothing would run through the canula. On examination no trace of the testis could be found. The fullness, which was extreme, followed up the course of the cord as far as the internal ring. The scrotum was somewhat more sensitive over the swelling than on small side; but the temperature was about the same. Fluctuation could be easily recognized. Incision was advised and consented to. The parts having been thoroughly prepared and a limited area cocainized, an incision was made through the overlying tissues. When the vaginal tunic was reached it was found thick and congested from a packy vaginitis. On opening into the cavity, a thick, whitish, creamy fluid gushed forth. About nine ounces were pressed through. After this ceased to flow the testis was sought for, but it seemed greatly enlarged. After extending the wound it was about to be raised up when a thin partition broke and there issued through a colorless, colloid material. Now the hydrocele was treated by the Volkman and later prompt recovery followed. A microscopic examination was made of the contents of both locules; except in consistence both locules were occupied by the same material. In the larger there were less stringy shreds of albumen. Both contained fat in great abundance, broken down epithelia and pus corpuscles. Many of the latter showed degenerative changes. There were a few blood globules with an excess of granular material.

This, then, clearly was a case of ordinary hydrocele undergoing transitional inflammatory and degenerative changes consecutive to simple exudation.

Chronic untreated or unrelieved hydrocele cannot fail to induce consecutively other pathological conditions, both directly and indirectly, the former by pressure on the cremaster muscle, so straining it as to induce a destructive atrophy of it with a further falling of scrotum toward the knees, pressure atrophy of the testicle and epididymis with an absorption of the secreting tubular structures. It is my belief that a large hydrocele favors hernia on the side involved. The shape of one of these masses is always conical. The effusion always begins at the base where the vaginal tunic is the widest. As it augments in volume the fluid follows the direction of the funiculas process, the summit of the bag taking the shape of a pointed cone. Advancing upward to the external ring, it enters the vaginal canal, and is only arrested where the processes-vaginalis ends and the spermatic cord begins. This is the point where the coverings of the cord begin.

COMPLICATIONS OF HYDROCELE.

The complications of hydrocele are of almost infinite number. No work that I am familiar with enumerates them all, or attempts to exhaustively consider their pathology.

It can be readily understood that anything that produces an irritation of the albugenic or vaginal serosa will provoke an exudate in varying quantities of morphological elements.

My purpose in the present instance will be to only chiefly consider the pathology of the most frequent disease which we find associated with dropsical effusions into the pouch of the testis.

This is hernia, and this alone can be at present considered. We find scrotal effusion in large quantities chiefly in two types of hernia in the adult. In all cases of strangulated hernia the amount of fluid in the sac varies though in many it constitutes the bulk of the tumor.

The type of adult hernia occasionally associated with hydrocele is chronic inguinal, although cystic pouches may be encountered in rupture anywhere located.

There is no pathological condition of the external genital pouch so commonly the cause of confusion and difficulty in diagnosis as the presence of localized effusions with hernial protrusion. At the very outset of the consideration of this part of our subject the question arises:—Do these watery accumulations precede or are they consecutive to hernia? If we include all fluid formations in the category of hydroceles as some pathologists do, then there can be little doubt but in some cases, probably the minority, the neoplastic cyst is an active etiological factor. Lying sausage-shaped, as it sometimes does, within the inguinal canal, it opens widely the bore of the funis, its tip like a Barnes' dilator in hernial dilation encroaching on and finally by pressure-atrophy opening widely the internal ring. With the absorption or sudden withdrawal of the fluid resistance to visceral descent having been displaced we will soon find the passage favorable to the evolution of a hernia. In most voluminous incarcerated ruptures of long standing we will find on dissection an extensive degeneration or transformation of tissue with locules of fluid of various consistence bearing different relations to the thick cartilaginous sac and the contained viscera. These liquid formations under these circumstances are dependent on degeneration of structure ensuing in consequence of interference with the vascular supply affecting the nutrition of the parts. It is probable, too, in a considerable number, a low grade of inflammation often supervenes from the strains and contusions which the exposed parts here are subjected to when the plastic, serous or other deposits fail of absorption. It is most extraordinary how rapidly a small scrotal hernia may enlarge by the augmentation of the fluid of an hydrocele, and how often symptoms of strangulation may suddenly develop in those complicated cases by changes within the hydrocele. The following example.

In the autumn of 1884, a man of large frame, fifty-nine years old, was admitted in Ninety-ninth Street Hospital, suffering from symptoms of strangulated hernia.

He said that for twenty years he had had a fulness in this scrotum on the right side. The doctor had informed him that it was not a rupture and advised him to wear a suspensory bandage. This he did, and he had no serious inconvenience until four days previous when he was kicked by a horse, the blow falling with force against the tumor. The next day, suffering considerable pain, and finding that his scrotum was greatly enlarged, he sought medical advice. Soothing applications were ordered with rest in bed, but as it continued to give him pain with convulsive vomiting, he was sent to hospital. On entrance he presented many of the constitutional symptoms of hernial strangulation; he was very weak, with a quick, thready pulse and was vomiting a greenish mucous material. His scrotum was as large as a medium-sized cocoanut, hard and resistant. The testis on the left side could be felt but the one on the side involved was indistinguishable. The fullness up the direction of the cord through the inguinal canal produced a distinct bulbing. On reflected light the transparency of the tumor was distinct. This then was a case of hydrocele probably attended by hernia. There was one clinical feature in connection with the case that inclined me to doubt this. Within an hour after he entered the hospital he had a free movement of the bowels. The night before he had been given a dose of castor oil he informed us. In the evacuation which he had it could be seen in vessel mixed with urine that there were particles of floating oil which made it evident that the laxative had traversed the entire alimentary canal; something impossible in the presence of a stenotic intestine. Having carefully considered all the puzzling features in the case, it was finally decided to locally anæsthetize the scrotum, make a free incision, drain away the effusion and then if a hernial strangulation was found give ether and relieve it.

When the tunica-vaginalis was opened more than a quart of turbid, yellowish brown fluid came away. Then the index finger was introduced when a mass of thick gelatinous substance was brought away with the finger-nail which was adherent to the epidiymis and tunica-albugenia Carrying the finger up the inguinal canalar passage made by the distended vaginal tunic no visceral protrusion was detected, and on impulse in coughing the finger's tip pressing over the nude fascia-transversalis, no evidence of an incipient protrusion could be felt. Now the cavity of the sac was thoroughly irrigated with strong mercuric bichloride and a gauze drain applied with the usual dressings. The symptoms of strangulation quickly disappeared when the pressure was removed. His recovery was rapid and uneventful. In this case, in the regular sequence of their occurrence, were first, hyrocele; secondly, a tumor producing an acute vaginitis with large effusion, and thirdly the reflex constitutional disturbances, resulting pain, by great hydrostatic pressure on the testis and strain on the spermatis cord.

Mr. Thomas Bryant (Medical Times and Gazette, January, 1861), reports case of woman sent into his service for operation for strangulated hernia in whom he found on opening the canal of Nuck no hernia, but a protruding cystic distension. He observed that "there are no symptoms of hernia which these may not present." Payne has reported a case of strangulated hernia in a man complicated by hydrocele (Medical Record, New York, May, 1879).

Gross has recently published notes on a kindred pathological condition lately observed in a female. His patient was first laparatomized for a ruptured ovarian cyst and again operated on for a crural hernia. In the first he encountered a mucous-serous fluid, this patient making a good recovery. Five years later he was called to operate on the same person for a hernia. On incision he discovered that the projecting mass consisted of a material similar to what he had seen in the ovarian cyst; hence he designates this pathological condition "herniare neoplasique." He observes that this inner surface is studded by mucoid vegetations which become easily detached on opening the cyst. He believes that they are not of the same genus as the malignant mucoid described by Mallassez and yet are unlike the benign variety of Pèan. (Gaz. Heb. Feb. 2, 1896.)

A somewhat similar case of multitocular hydrocele associated with hernia has been reported by J. W. White (University Med. Mag. 1893-1894, vol. vi. p. 190).

A single case of acute hydrocele of the spermatic cord is reported by B. Johnson Taylor (in British Medical Journal, 1892, vol.II,p. 107). The patient was suddenly seized with pain after his supper; operated on for strangulated hernia same night. Everything went well until morning of sixth day, when severe pain with bulging of the parts began along the course of incision. Under the impression that there was a re-descent of the intestine, wound was again opened when a large hydrocele of the cord came into view; this was opened and drained when the case went on to full recovery.

In Boyer's surgical writings he makes an extended observation on this complication of hydrocele and hernia and gives with considerable fulness the two remarkable cases of Pelletan and Le Dran. Curling mentions in his work on diseases of the testis a type of hydrocele of a rather peculiar pathological character. He alleges that sometimes after a hernia is reduced, the neck becoming obliterated, the sac which has been left in the scrotum may take on active secretion and produce hydrocele. Boyer supported this view on the occasional anatomical elements of hydrocele. (Malad. Chirug. vol. viii, p. 301.) It is usually assumed that when a part is without function it soon wastes and disappears, and that in hernia after the viscera have left their abode in the sac the surfaces of the sac become adherent and atrophy disintegrates it. But that we may have a hydrocele of this character has been demonstrated in my own practice last winter, 1895-96.

On the 2nd of January, I operated on an active young man for the cure of an inguinal hernia in whom the protrusion came well down into the scrotum. The O'Hara operation was employed, a procedure by which the sac is left in situ after divison of the neck. Everything went well until the third day, when, the dressings becoming loose, the patient discovered that the fullness in the scrotum was larger than before operation. He sent for me in haste to inform me that the operation was a failure and the rupture had returned.

On examination it was found that this was not the case. Through the lower edge of the incision—not yet solidly united—I passed the top of a probe into the sac when there issued up about two ounces of straw-colored fluid. It did not reaccumulate and recovery was no further impeded. Curling designated this variety of scrotal effusion, "spurious hydrocele."

Percival Pott detailed the history of such an unusual case under peculiar circumstances. A young man suffering from strangulation came under his care. He found the scrotum greatly distended with fluid and no history of a previous rupture. Dissecting down he came on to a thickened hernial sac filled with serum. When he opened this a large escape of fluid followed with immediate collapse of the swelling, but on passing his finger up he came on a loop of intestine which had made its way through the formerly closed neck; here it was strangulated. He divided the constriction and returned it.

Scarpa observed in reference to these mixed cases that "whatever difficulty these complications may oppose to exact diagnosis of reducible intestinal hernia, they do not occasion any with regard to operation whenever the hernia is effected with strangulation, or the symptoms accompanying incarceration of the intestine show clearly the nature of the principal disease, and moreover, render this operation necessary; by means of which we have at the same time the advantage of laying bare what caused the complication of the hernia and radically curing both at the same time." (Treatise on Hernia [p. 230]. By Wishart.)

As an illustration of the surprising rapidity with which a hernial sac may enlarge and simulate hydrocele, Scarpa cites the case of a stout young man who had a small incarcerated inguinal hernia of eight years' standing.

While on a journey on horseback his truss broke. When he alighted he noticed that his scrotum had become enormously distended; besides colic and vomiting soon set in. The tumor measured 16 inches in circumference and had buried up the penis. The whole thing looked like a hydrocele and might have been mistaken for one—he adds—if it were not for the symptoms of strangulation, and "I could with difficulty persuade myself that this large tumor was formed for the most part by water collected in the vaginal coat of the testis or in the sac of a hernia, as the patient never had the smallest mark of serous effusion in the scrotum, as well as because of the repeated assertion of the patient that the hernia never before exceeded the size of a hen's egg, and there was no reason for believing that so large a quantity of fluid could have descended from the abdomen, in one, otherwise in good health. There was no question about the impossibility of reducing the parts without an operation as the symptoms were increasing in severity. After incision three pints of serum escaped. At the upper part of the sac a knuckle of intestine about three inches long was nipped. This point was divided and the intestine returned when recovery speedily followed.

Adams, Cloquet, Morris, Bonisson and many others both in this country and Europe have reported vast serous accumulations in the sacs of old incarcerated scrotal herniæ. In many such complicated cases we are informed that great relief followed the tapping of the bag of water.

In Bonisson's case, on the first tapping he removed 28 pints of fluid. No ill results followed. The behavior of fluid accumulations within the cavity of the tunica-vaginalis as contrasted with other serous cavities is singularly unique and it is the same with respect to the vascular arrangement on which this pathological condition primarily depends for its disappearance when spontaneously disposed of. The arterial supply to the brain is by various directions and the venous current is through large vessels, this being favored by gravity. Serous effusions between or beneath the meninges seldom occur in sufficient quantities to compress the brain except in tuberculosis. Late observations demonstrate that in pleurisy with effusion tuberculosis is in operation in more than a third of the cases. The proximity of the pleuræ necessarily implies an active vascular supply and hence in large serous effusions here we will sometimes note the surprising rapidity of resorption. Ascites we seldom or never see except as a secondary lesion as in hepatic, cardiac or tuberculous diseases. It rarely appears except where the constitution is shattered and the integrity of some organ vital to life is destroyed. The testes occupy a dependent position and are swung like two plummets from the spermatic cords. Aneurism or atheroma in the spermatic arteries we seldom see. It is the contrary with the vast venous plexus which must carry its blood against gravity. The panpiniform plexus though endowed with much thicker walls than any other veins in the body, and therefore are not entirely unlike arteries, are frequently the seat of degenerative changes after middle life and often before it. As these walls begin to weaken we will encounter varices in some; in others we will find evidence of a failure of vascular integrity by an elongation of the testis particularly in old men. This is partly due to an atrophy of the cremaster muscle, but the chief cause is in the vessels. The remarkable elastic tensile property of the spermatic cord we will notice to good advantage in castration. When we cut off the cord low down near the head of the epididymis in an instant the proximal end is out of sight far up the inguinal canal. The course of the emulgent vessels of the testis is very tortuous and their length greater than any other in the body. The peculiarities of circulation in this region must, in part at least, if not entirely, account for the want of spontaneous resorption of fluids within the vaginal-tunic. The complication of a hernial descent must necessarily embarrass the circulation and interfere with nutrition. But slight, if any, constitutional disturbance marks the presence of hydroceles if uncomplicated and of moderate volume. Those of the most robust health may have them as well as the more frail and there is nothing to point to their development in any manner depending on constitutional conditions or disease of a central important organ. But when attended by an enterocele or a large omental mass their weight becomes burdensome, sympathetic vesical irritation is liable to supervene and occasional attacks of colic are common.

Scrotal effusions, then, within the tunica-vaginalis are dependent on local changes in the environment of an organ not essential to life; their pathology, being disassociated with constitutional disease or organic changes in a contiguous or remote viscus, it is evident that the basis of treatment here must be radically different from what obtains in other serous cavities.

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TRANSLATION.

A FEW WORDS UPON THE DIAGNOSIS, PATHOGENY AND TREATMENT OF GENITAL PROLAPSES.

Translated for Gaillard's Medical Journal.

By H. McS. GAMBLE, Ph. D., M.D.,
Moorefield, W. Va.

We have at this moment, in our wards, two women of the same age, forty-four years, who, after having had, the one two labors at term, the other but one labor likewise at term, got up too soon, about the fifteenth day, and after a long period of perfect health (seven years for the first, two years for the second), commenced to suffer, without appreciable cause, with vague pains in the loins at first, then in the thighs, afterwards with a very painful sensation of depression of the forces, a sort of anæsthesia which renders them incapable of the least effort, and to-day come to consult us because they have for some time past noticed the presence at the vulva of an abnormal tumefaction, which is especially marked when they are in the standing position.

The first of these patients, examined in the speculum position, presents at the vulvar orifice a prominence of rounded form, of the size of a hen's egg, furrowed with transverse folds; this prominence is manifestly formed by the anterior wall of the vagina. Behind it is found the uterine neck, a little larger than in the normal state, and the lips of which present little ulceratious in the vicinity of the orifice of the mouth of the uterus; finally, behind the cervix, is observed a counter-projection due to the descent of the posterior wall of the vagina. A sound introduced into the bladder penetrates into the anterior vaginal tumor, which permits us to make the diagnosis of cystocele, and the finger introduced into the rectum, penetrates likewise into the prominence which is seated upon the posterior wall of the vagina, hence there is a rectocele.

In short, it is a question here of a total genital prolapsus. The diagnosis is besides quickly confirmed when the patient stands up. Then the uterus escapes entirely from the vulva and the anterior and posterior walls of the vagina are turned like the finger of a glove. This is a prolapsus in the third degree; there was at first lowering of the uterus (first degree), then the neck appeared at the vulva (second degree), finally complete prolapsus; falling or precipitation of the womb.

Our second patient also presents a tumor at the vulva, but smaller than that of which we have just spoken; it is composed of two valves, the one anterior, the larger, the other posterior, covered with transverse folds and separated from one another by a furrow likewise transverse, which is nothing else than the orifice of the vagina. When we practice the vaginal touch, we observe that the neck of the uterus is a little lowered but it is still far from the vulva. A sound introduced into the bladder shows that this organ does not project into the vagina; the rectal touch, that the intestine has remained in place and does not fall into the vaginal cavity. The diagnosis is clear: it is a case of simple vaginal prolapsus.

We have therefore under our eyes two varieties of prolapsus of the genital organs: a total, complex genital prolapsus, and it is thus that it is the more frequently seen; a prolapsus of the vaginal walls alone, without cystocele or rectocele.

Can one confound clinically each one of these vaginal hernias: prolapsus of the uterus, cystocele, rectocele, with any other affection? Yes.

Prolapsus of the uterus may be taken for: (a) a polypus appearing at the vulva; (b), a uterine inversion; (c), a hypertrophic elongation of the neck.

It is easy to avoid the gross mistake which consists in taking a polypus for a prolapsus; it suffices to practice the vaginal touch, which will cause one to recognize the conservation of the vaginal culs-de-sac which are obliterated in prolapsus, the dilated neck embracing the tumors. We can make use of the method of bimanual palpation, which will show that the body of the uterus is in place; finally the polypus does not present, like the prolapsed uterus, an opening at its summit, and its form is not the same as in this latter organ.

As far as concerns uterine inversion, a little attention will permit you to recognize it. Here the vaginal culs-de-sac are preserved and the bimanual touch shows that the body of the uterus is absent; finally if we attempt to introduce a hysterotome between the lips of the cervix and the tumor, the instrument does not enter.

In hypertrophic elongation of the neck, we see in an advanced degree the mouth of the womb at the vulva; but should it not have arrived there, we may follow the neck into the vagina. It is observed that the vaginal culs-de-sac are very much deepened, although they may have preserved their normal situation.

Uterine catheterism shows that the instrument penetrates to a depth of 10, 12, or 14 centimeters; bimanual palpation, that the body of the uterus is of its ordinary dimensions or is but slightly increased in size. It is then easy to affirm that the exaggerated track of the hysterometer in the womb is due to the elongation of its neck.

Let us pass on now to the diagnosis of vaginal cystocele, a tumor formed by hernia of the bladder into the vagina (anterior wall), and which is recognized by the fact that a sound introduced into the urinary reservoir can easily be felt through the anterior wall of the vagina. There is but one affection, to which I was the first to call attention, that might be confounded with it; I refer to urethrocele. Here the inferior wall of the urethra alone projects into the vagina; it is a question of a dilatation of the inferior wall of the canal or of a cavity in communication with it. The tumor is located at the vulva and is often rendered more salient by any effort, but does not in general exceed the size of a walnut. It is well defined superiorly and is not continuous with the bladder which has remained in place. Catheterism shows that in order to reach the interior of the bladder it is necessary to traverse a much longer route in following the inferior wall of the urethra than in being guided upon its superior wall. The sound introduced into the cavity of the urethrocele brings away no urine, or only a few drops of this fluid.

These are characters sufficient, it seems to us, to differentiate urethrocele from vaginal cystocele.

Rectocele could seldom be confounded with but one affection: simple prolapsus of the posterior wall of the vagina. Here the mucous membrane of the vagina, alone, in its inferior half, has glided upon the deep planes; it is the more frequently hypertrophied. To recognize simple posterior vaginal prolapsus, it suffices to practise the rectal touch, which will show that the rectum has preserved its normal relations and that no diverticulum extends into the vagina, which, on the contrary exists in rectocele.

It is not all to have recognized the variety of a genital prolapse, it is still necessary to seek the cause of it, in order to institute a rational treatment.

Save a few exceptional cases in which the prolapsus of the uterus is suddenly produced (it is then said to be acute), it shows itself in general only in a slow manner, at a time more or less near, but sometimes very remote from the date of confinement. There are some women who have had numerous children at term and who do not present any prolapsus; others, on the contrary, after one or two labors (it is thus in the case of our patients), are attacked with this infirmity. Labor without doubt, is the principal cause of the affection, but there is here an individual predisposition about which we know nothing.

There are genital prolapses which result from a pregnancy, from the presence of a pelvic tumor; their origin is easy to grasp. This is true likewise of the prolapses of the uterus, which depend upon the organ itself (total hypertrophy, hypertrophic elongation of the neck, fibromatous or cancerous neoplasms). But it is above all the alterations of the means of fixation of the pelvic organs that give rise to genital prolapses, whether the cause be a relaxation of the means of suspension of the womb (broad, round or utero-sacral ligaments), or whether weakness of the perineal diaphragm is concerned. This is their most ordinary cause: as soon as the perineum yields, everything is precipitated upon the vulva.

The perineum becomes insufficient especially because of rupture of the fourchette during labor, for this rupture causes an elongation of the vulvar opening and consequently a diminution of the width of the perineum. In some investigations made in 1889 with Dr. Chaput we demonstrated that, when the vulvar opening has a width of more than five centimeters, we observe a slight lowering of the uterus with a tendency to vaginal prolapsus, with or without cystocele or rectocele.

Another fact deserves to be mentioned; it is the weakening of the musculature of the perineum, without there being any laceration of the pelvic floor. In certain women, it is so slightly resistant that one succeeds in giving to the vulva incredible dimensions, upon making slight tractions upon this orifice.

In the case of my two patients, we find this weakening of the perineal body; the vulva is large, you make it as large as you wish and yet there is no appreciable trace of an old rupture.

The prognosis of genital prolapses is serious, in the sense that we have to deal with a very troublesome infirmity, which has a tendency to become aggravated if we do not intervene and which relapses quite often, in spite of the rational and ably performed operations that may be opposed to it. It is quite evident that when we have to deal with a prolapsus of the uterus due to an endometritis, to a hypertrophic elongation of the neck the indication is to resort to a curettage, to amputation of the cervical segment of the womb; that if it results from neoplasm, fibroma, cancer, or bilaeral lesions of the annexes, ablation of the uterus by the vagina, vaginal hysterectomy is formally indicated. But when the prolapsed uterus is sound vaginal hysterectomy ought not to be done. In a goodly number of cases, the uterus has been removed under these conditions and the prolapsus of the vaginal walls, the cystocele, the rectocele have been quickly reproduced; we find numerous examples of this in the recent discussion of the Societe de Chirurgie (1893-94).

Some have conceived the idea, in the cases of genital prolapses in which the perineum seems sufficient (they are extremely rare), in which, consequently, the suspensory apparatus of the sound uterus alone appears involved, of addressing themselves to this apparatus; some have shortened the round ligaments (the Alquié-Alexander operation), some have practiced hysteropexy, that is to say the fixation of the uterus to the anterior abdominal wall, etc. If some successes have been registered in consequence of these interventions, how many relapses have there not been observed? Besides, I could not insist too strongly upon it, the cases in which the suspensory ligaments of the uterus alone appear involved are excessively rare, almost always there is perineal weakness.

So, in those cases in which the uterus is sound, is not increased in volume, in those in which it is simply lowered and in which this lowering is accompanied by rectocele, by cystocele. by simple prolapsus of the vaginal walls, it is to the supporting apparatus of the uterus, to the perineum, that it is necessary to address one's self.

Ablation of the uterus alone, I have already remarked, does not prevent the return of vaginal prolapses; besides, hysterectomy may be dangerous in old cases, because of renal lesions which sometimes cannot be recognized and which increase the gravity of the prognosis of the operation.

We will mention as proof of it but one case, in which our clinical chief, M. Demoulen, performed for a complete prolapsus of the uterus, not hypertrophied, accompanied with rectocele and cystocele, a vaginal hysterectomy with anterior elytrorrhaphy and colpo-perinæorrhaphy. Ten hours after the operation, which had presented no difficulties, the patient died. The autopsy revealed a dilatation of the ureters, with distension of the calecis of both kidneys, lesions which careful palpation of the renal regions had not permitted a recognition of, more than had an examination of the urine.

Hence, in cases in which the uterus is sound, in those in which one has to deal with rectocele, with cystocele or with simple prolapse of the vaginal walls, it is necessary, I repeat, to address one's self to the perineum not to the vagina.

It is necessary in order to remedy the cystocele, or the simple prolapse of the anterior wall of the vagina, to practice a retrenchment of this wall, to do in a word an anterior elythorrhaphy; in order to relieve the rectocele, to execute a posterior elytrorrhaphy, to combine these two operations if the lesions are complex, if there is an accompanying hernia of the uterus, and to add thereto a good perinæorrhaphy.

These operations ought to be largely executed.

Operative methods are not wanting in order to reach the end proposed, but their discussion would carry me too far and I propose to myself to do this for you in a future lecture.

SELECTIONS.

THE PATHOLOGY AND TREATMENT OF SHOCK.*

By Eugene Boise, M.D., Grand Rapids, Mich.

"A specimen of ruptured heart was presented at the meeting of the Société Anatomique by Greffo. It was observed in the service of Chautemesse, by Menetrier. The patient, a woman of seventy-one years, was in apparent good health, but had a certain excess of adipose. It was suddenly announced to her that her son was very ill. She was immediately taken with choking, with syncope, and died. At the autopsy a certain quantity of blood was found effused into the pericardium, and a very neat rupture of the posterior wall of the left ventricle. The valves were healthy. The myocardium did not appear to be altered exteriorly."†

This is a case of sudden death from mental shock, and the interesting question immediately confronts us. What was the condition of the heart induced by the shock?

We are told that the pathology of shock is "paresis of the heart and abdominal vessels."‡

Paresis of a muscle implies weakened contractile power. Rupture of a muscle by its own action is caused only by a sudden unusually violent contraction. Therefore, in the case above cited the shock must have caused sudden violent contraction of the heart; a condition resembling spasm rather than paresis.

This much by way of introduction to a further discussion of the pathology and treatment of shock.

What is the pathology of shock? is a question that has forced itself upon the attention of every observing surgeon. It is a question never definitely or completely answered, yet of prime importance to every operator. It has been almost universally accepted that it is some form of paresis of the nervous system.

In fact, Mr. Mansell-Moullin, in the International Encyclopœdia of Surgery, says: "Shock is an example of reflex paralysis in the strictest and narrowest sense of the term, a reflex inhibition, probably in the majority of cases general, affecting all the functions of the nervous system, and not limited to the heart and vessels only."

Dr. George W. Gay says:* "Experimental physiology has demonstrated that in shock there is a reflex paralysis of the heart and abdominal vessels through the medium of the vasomotor system." Other writers give the same or similar pathology, but in no case is the reasoning entirely satisfactory, even apparently, to the authors themselves; hence I have thought that further inquiry and argument might be of interest and benefit. Let me therefore introduce my discussion by this question: Is it not probable that the pathology of surgical shock is in no sense a paresis, but rather an excessive irritation of the entire sympathetic nervous system, manifested mainly by excessive stimulation of the vasomotor (constrictor) nerves?

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* Read by invitation before the New York Obstetrical Society, January 7, 1896.

† Medical and Surgical Reporter, October 12, 1895.

‡ Gay. Reterence Handbook of the Medical Sciences.

* Reference Handbook of Medicine and Surgery.

In the entire symptomatology of shock there are only two facts which apparently antagonize this theory—namely, the lowered blood pressure and the dulled cerebral and spinal functions, but that these are only apparently antagonistic I believe.

It seems to be an established physiological fact that all efferent non-medullated (sympathetic) nerves are excitor in their action; that they tend to exert a steady tonic excitor action whether they be vasomotor or other. And, inasmuch as the great majority are known to have medullated fibers accompanying them, which pass through the ganglia unmodified, and whose action in inhibitory, it is a fair inference that every excitor sympathetic nerve has its corresponding inhibitory cerebro-spinal nerve, and it may be that inasmuch as there is one general vasomotor center, there may well be some general inhibitory center. Be that as it may, all inhibitory nerves (not speaking of the cranial nerves) arise from the anterior columns of the spinal cord, and pass through the corresponding sympathetic ganglia unchanged to be lost finally in the terminal ganglionic cells, maintaining throughout their entire course the physical characteristics of spinal nerves.

But it is only by an analysis of the symptoms of shock in their relation to the physiological action of the nervous system that we can arrive at the correct pathology. These symptoms are mainly—

1. Mental apathy. 2. Muscular weakness of the limbs, etc. 3. Lividity of skin, lips blue, finger nails blue, no waxy pallor. 4. Pupils dilated. 5. Perspiration. 6. Pulse almost imperceptible, unequal and very rapid; arteries small and tension low. 7. Decreased secretion of urine.

These are the main symptoms universally conceded to be characteristic of shock, and yet the article in the International Encyclopædia of Surgery, in which the accepted pathology of shock is very carefully discussed, says: "It may be taken as demonstrated beyond dispute that in shock there is a reflex paralysis of the heart and abdominal vessels," but admits that "there is more than this," "while the abdominal vessels are somewhat distended (sometimes) they are not enough so to account for the symptoms;" that "there is probably a paralysis of the entire vasomotor system," and concludes, as I have before quoted, that "shock is an example of reflex paralysis in the strictest and narrowest sense of the term, a reflex inhibition, probably in the majority of cases general, affecting all the functions of the nervous system, and not limited to the heart and vessels only."

I am obliged to admit that I can not perceive how an analysis of the symptoms, according to known physiological facts, will bear out this statement.

It would seem that the prevailing idea that shock is essentially a paresis is based upon—

1. The marked depression which undoubtedly exists in every well-marked case, especially of those portions of the system under the control of the brain and spinal cord directly.

2. The low arterial tension which exists. That there is mental apathy, muscular weakness (general), and dulled sensation is evident in every case, but it seems to me that this condition is not properly part of the pathology of shock, but rather a result or symptom merely, very like the reflex paraplegia described by Dr. Brown-Séquard. He says the paraplegic symptoms depend upon or are caused by a spinal anæmia due to tonic contraction of the arterioles supplying the part, and that this is in turn the direct result of irritation of the vasomotor nerves supplying those arteries.

If we accept this pathology of reflex paraplegia, as explained by so accurate an observer as Dr. Brown-Séquard, it follows as a logical conclusion that if local acute spinal anæmia causes paresis of the nerves below that point, acute general anæmia of the entire cerebro spinal system, induced by general arterial contraction may cause general cerebro-spinal paresis.

That the entire arterial system is contracted all observers must admit, but that it can not be due to hyperirritation of the general vasomotor system they do not admit, because theoretically arterial tension should be high, whereas it is low. Moreover, the experiment of Goltz, of Strasbourg, seems to contradict it.

In this a frog, suspended legs downward, was struck sharply on the abdomen. The heart immediately stopped, and the abdominal vessels became intensely distended, owing to paralysis of their muscular coats.

Is it not possible that this experiment has been misinterpreted, and therefore has led to serious misapprehension? In the first place, whether the conditions (anatomical and physiological) in the frog and human being are the same I do not know, but I do know that in surgical shock, especially where induced by operations on the abdominal viscera, there is no marked increase in the distention of the abdominal vessels. This same observation has been made by others.

That a correspondingly severe blow on the epigastrium of a human being might result in conditions similar to those observed by Goltz I can conceive, but would it be surgical shock? Would it not rather be concussion of the solar plexus? A severe blow on the head suspends the activity of the nerve cells of the brain—concussion of the brain. A severe blow on the spine causes a more or less complete suspension of the functions of the nerve cells, etc., of the cord—concussion of the spine. The solar plexus is, like the brain and spinal cord, largely composed of nerve cells which, though they may not have the power of originating nerve force, most certainly have an important influence on its transmission and on the life of those fibers springing from them. Therefore a severe blow over the solar plexus might, and naturally would, cause suspension, more or less complete, of the power of its nerve cells, and consequently cause paralysis, more or less complete, of the nerves passing from them, with distention of the vessels supplied by those nerves. But that an injury to a nerve or plexus can transmit through afferent fibers an impulse of paresis which will be reorganized at the reflex center and transmitted as a paretic impulse to the entire sympathetic system, I can not understand. I think I am right in saying that any impulse originated by traumatism, which is capable of being reflected, is necessarily an impulse of stimulation.

The theory advanced many years ago by Dr. Weir-Mitchell and others, that severe injury to nerves would cause an impulse of stimulation so excessive as to completely overwhelm the nerve centers, and thus cause reflex paralysis, may possibly serve to explain certain cases. I can conceive that the nerve cells from which the irritated fibers spring may be overwhelmed, but that this paretic condition can be so extensively reflected, or can involve so large an area of nerve centers as to cause the universal paretic condition, cerebral and spinal, found in all cases of severe shock, I can not believe.

But the heart was also markedly affected in Goltz' experiment. This would follow as a necessary physiological consequence of such a blow. The solar plexus receives fibers from the pneumogastric, the inhibitory nerve of the heart; some of these fibers are afferent, conveying impressions to the medulla. A blow on the epigastrium would probably cause an impulse of stimulation to the afferent fibers passing through the solar plexus, and this impulse would certainly be reflected down the pneumogastric, causing inhibition of the heart. But all this is not surgical shock, as we see it as a result of abdominal operations or crushing injuries to the extremities.

Surgical shock is essentially due to a reflex impulse which is distributed not merely to the cardiac and vasomotor nerves, but to the entire sympathetic system, as I think an analysis of the symptoms will show.

The fact that arterial tension is undoubtedly low need not be a stumbling-block to us, nor should it bear weight in favor of vasomotor paresis in the face of the combined evidence of other conditions antagonistic to it, especially as it is capable of satisfactory physiological explanation.

Let me discuss the symptoms in the order of their occurrence as nearly as may be. First occurs the injury—a crushing injury to the limbs, it may be—or a laceration or contusion of sympathetic fibers in the abdomen. Not only are the nerves beyond the point of injury strongly irritated, but an impulse of intense irritation passes along the afferent nerves to the corresponding nerve centers, and is so severe that the entire reflex centers of the cord, from which the efferent sympathetic fibers arise, are intensely stimulated, and an impulse of extreme stimulation is transmitted to the entire vasomotor and sympathetic system.

As a consequence, the arterioles of the entire body are thrown into a condition of extreme constriction, causing a thready, almost imperceptible pulse. If the impulse were of paresis, the arteries would of necessity be dilated. No fact in physiology is better known than that paralysis of vasomotors causes dilatation of corresponding arteries. At the same time the augmentor nerves of the heart are intensely stimulated, and, as a necessary physiological consequence, the heart's action becomes very rapid and its contractions almost tetanic. It contracts strongly and relaxes imperfectly—an exaggerated systole and incomplete diastole. By reason of its imperfect relaxation it receives a scanty supply of blood and sends into the arteries at each contraction only a small percentage of the normal quantity of blood. As a consequence, the arteries are not at all distended and the blood pressure is necessarily low. This is not an imaginary explanation nor merely plausible, but is more than probable, as the same condition of the heart has been experimentally caused by electrical stimulation of its excitor nerves.*

Now, having these contracted arterioles, with limited supply of blood, what conditions would necessarily follow? First, acute anæmia of the brain and spinal cord, causing partial suspension of their functions (a condition which is marked in severe cases of shock), slowness of intellectual faculties, great muscular weakness, and partial anæsthesia.

This condition, then, is not part of the pathology of shock, but rather a symptom which will pass away when the cause is removed, exactly as in the cases of reflex paraplegia so ably discussed by Dr. Brown-Séquard.

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* Landois and Sterling. Manual of Physiology, p, 106.

Again, the decreased or even suspended secretion of urine is a direct result of contracted renal arterioles.

It has never been demonstrated that there are any nerves which have any direct influence on the secretory function of the kidney other than its vasomotor nerves. The amount of urine secreted, therefore, depends entirely on the vascular conditions; dilatation of the renal arterioles or increased velocity of the current, causing increased secretion of urine; contracted arterioles, especially if connected with low pressure, causing decreased secretion.

Inhibition or paralysis of the abdominal vessels would cause increased blood supply to the kidney and increased secretion of urine especially if the arteries of the rest of the system were contracted.

Again, in surgical shock we have a livid pallor (if I may so express it) of the skin, with blueness of the lips and finger nails, and coldness of the surface. This is also a direct and necessary result of general arterial contraction. The smaller arteries have the most marked muscular coat, and are therefore most severely contracted under vasomotor stimulation. This, with imperfect relaxation of the heart, throws the blood into the veins and capillaries, which become generally distended, or at least disproportionately filled.

All these symptoms, which are present in every severe case of shock, are natural and necessary consequences of general contraction of the arterioles, or general vasomotor irritation, and could not occur if the condition was one of vasomotor paresis. One of the best known of vasomotor experiments is, that section of the cervical sympathetic, with consequent paralysis of the vasomotor nerves beyond that point, causes intense arterial hyperæmia of the tissues supplied by those nerves.

But we have other symptoms not dependent on vasomotor influences, but which just as evidently are caused by excessive stimulation of the sympathetic system. In shock the pupils are dilated. Section of the cervical sympathetic causes paralysis of the nerves beyond the point of section and contraction of the pupil. Stimulation of the cervical sympathetic always causes dilatation of the pupil.

Again, in shock there is free perspiration. Special secretory nerves, non-medullated, branches of the sympathetic system, have been demonstrated as distributed to the sweat glands, stimulation of which will cause increased perspiration without reference to the vascular conditions.

If in shock there is hyperirritation of the entire sympathetic system, these secretory fibers would be irritated, and there would be increased perspiration, a condition almost invariably present.

Again, there is often relaxation of the sphincters in severe shock. This condition implies a mixed nervous action. Normally, the sphincters are largely under the control of the will, and even though there be increased peristaltic action above them, the sphincters will not be relaxed. On the other hand, even if voluntary control of the sphincters be lost, as by cerebral concussion, there will not necessarily be any evidence of their relaxation, because peristalsis may be weakened or quiescent. But in excessive stimulation of the sympathetic system there is increased activity of the muscles of the intestines, which are directly under the control of this system (as has been conclusively proved), increased peristalsis. If, in addition to this, there is acute cerebral anæmia, with consequent impairment of volition, the voluntary control of the sphincters would be suspended, and, with increased peristalsis, there might well be involuntary evacuations.

Thus a careful, unprejudiced analysis of the prominent symptoms of shock, based on what we know to be universally accepted anatomical and physiological facts, forces me to the conclusion that there is no other correct interpretation of the phenomena of shock than that based on the theory of hyperirritation of the entire sympathetic system.

If it be true that there is a general inhibitory system, the primary factor might be general paralysis of inhibition, with consequent secondary hyperstimulation or augmentation of the entire non-medullated system, if it were not for the fact that (according o Foster) cxperiments tend to show that, while there is a constant tonic activity of the vasoconstrictor fibers, there does not appear to be any such constant action of the vasodilators (inhibitory).

I therefore can not but conclude that the primary and essential factor in surgical shock is hyperirritation of the entire sympathetic system.

A consideration of the treatment of shock will bring us to the same conclusion.

Clinical experience has taught us that the remedies most useful in its treatment are, of drugs, nitrite of amyl, nitroglycerin, opium, and strychnine. Of other agents, the external application of heat, the rectal injection of water as hot as can be borne, and intravenous transfusion of saline solution at the temperature of 118° or 120°.

It is beyond question that nitrate of amyl acts as a rapid but evanescent relaxant to the muscular coat of the arterioles. The flushed face and sense of cerebral "fullness" which follows a few inhalations is satisfactory evidence of this action. When, during a severe abdominal operation, shock supervenes, as shown by the rapid, thready pulse, nothing brings such speedy relief as inhalation of nitrite of amyl, but the evanescent nature of the remedy precludes any dependence on it for a prolonged effect. To those who have had occasion to use the remedy in these conditions no description of its effect is necessary. Clinical experience speaks loudly for it as a rapid dilator of contracted arterioles.

Nitroglycerin, another member of the same group, has long been known as a "heart tonic," not by reason of its special action on the heart, but because of its relaxing effect on the arterioles, thus relieving an overburdened heart. There has never been any question as to its paralyzing action on the muscular coats of the arterioles, and it is universally conceded that it is one of the best remedies in surgical shock.

If it be true that the pathology of shock is a hyperirritation of the entire sympathetic system, it can be easily understood how opium may be reason of tonic spasm of their muscular coats; and we should also expect benefit from nitrite of amyl and nitroglycerin because of their undisputed action as relaxants of arterial spasm. The reputation of opium, while firmly established in the estimation of many surgeons as an invaluable remedy in the treatment of shock, is not so unquestioned as an arterial relaxant. And yet physiological researches have fully proved that in full doses it exerts a marked sedative action on the vasomotor system, and not only on the vasomotor, but on the entire sympathetic system.

Therefore, if the pathology of surgical shock be hyperirritation of the entire sympathetic system, it can be easily understood how opium may be an invaluable agent for its relief.

Strychnine has long been held in high esteem as a remedy of great value in the treatment of shock, many operators placing their main reliance on it. A consideration of its action, as demonstrated by physiological experiment, shows that its use is not only not incompatible with the irritant theory of shock, but is strongly confirmative of it.

Van Deen, by his experiments on animals, has shown that strychnine stimulates the motor centers of the spinal cord. Other experiments have confirmed this, so that it is undeniable that the main feature of its action is stimulaton to the cerebro-spinal system of nerves, especially to the anterior columns of the spinal cord.

In toxic doses the effect is almost entirely confined (apparently) to this cerebro-spinal system. In the anatomy of the vasomotor system the nerves which act as vaso-constrictors are invariably nonmedullated and arise from the cells of the sympathetic ganglia. In other words, they are purely fibers of the sympathetic nervous system. Excitation of the entire sympathetic system would therefore cause excitation of these fibers, and contraction of the muscular coats of the arteries to which they are supplied.

Accompanying each vaso-constrictor sympathetic nerve fiber there is always another nerve fiber which arises from the anterior columns of the spinal cord and passes through the sympathetic ganglia without becoming connected with any of its nerve cells, and reaches its destination in the cells of the ganglia of the muscular coats of the arteries. It is medullated throughout its entire course, and is anatomically, in all respects, a spinal nerve. It is always inhibitory in its action, or vaso-dilator.

Therefore, if shock is characterized by spasm of the muscular coats of the arteries, due to excitation of the vaso-constrictor sympathetic fibers, strychnine, by reason of its peculiar affinity for the cerebro-spinal system, especially the anterior columns of the spinal cord, would disproportionately stimulate these spinal inhibitory fibers, paralyzing, as it were, the ganglia of the arterial muscles, and tend to antagonize or overcome arterial spasm, and in this way would be a valuable agent in the treatment of shock.

"It has been shown by the experiments of Klapp that the primary stimulation of the vasomotor centers (by moderate doses of strychnine) is followed by fall of arterial pressure and vasomotor palsy. Also that very large doses produce an immediate depression of the vasomotor centers and fall of the arterial pressure."*

His experiments also show that not only do large doses paralyze the vasomotor center, but they slow the pulse by an immediate paralyzing action on the excitor ganglia of the heart.

Dr. Carl Heineman has also found that "large doses cause diminished frequency of the cardiac movements with diastolic pauses."

La Housse also, by his experiments on dogs, has demonstrated that sulphate of strychnia slows the action of the heart by reason of a paralyzing influence on the intracardiac ganglia—exactly the same influence that I have endeavored to show that it exerts on the ganglia of the muscular coats of the arteries. Now, according to the irritant theory of the nature of shock, there is not only arterial spasm, but there is also cardiac spasm—the heart contracting strongly and relaxing imperfectly—exaggerated systole, and incomplete diastole. If this theory be the true one, and if the deductions of La Housse and others be correct, we should expect strychnine in the large doses always used to be of great value, not only because of its stimulating action to the vaso-dilators (or paralyzing action on the terminal vasomotor ganglia), but by reason of its paralyzing action on the intracardiac ganglia, thus relieving cardiac spasm and allowing full and normal relaxation.

Strychnine, therefore, falls naturally into the group of arterial and cardiac relaxants, and justifies its selection as one of our most valuable remedies in the treatment of shock.

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* H. C. Wood. Therapeutics and Pharmacology.

An analysis of the action of the other remedies mentioned (external heat and rectal and intravenous injections of hot water) will not only bear out this hyperirritation theory of shock, but almost necessitates its recognition.

All operators admit the usefulness of heat to the surface, but say that it is used to "stimulate the circulation."

This term is vague, and in this connection means nothing. The desire is to restore warmth to the skin and bring about a condition of arterial hyperæmia. To do this, external heat must be judiciously applied. It must not be so intense as to overstimulate the ganglia in these cutaneous arterioles and cause further contraction, but must be of such degree and nature as to "invite" the blood to the surface.

Section of the cervical sympathetic causes paralysis of the vasomotor nerves beyond that point, and consequent arterial hyperæmia (intense flushing) of the corresponding side of the head. Heat applied to the surface of the body accomplishes the same purpose by sedation of the ganglia of the cutaneous arterioles, thus allowing their relaxation, which is manifested by arterial hyperæmia of the skin.

Heat applied to the surface of the body, therefore, acts as a local sedative to the cutaneous arterioles and tends to their relaxation. Whether this influence of sedation is transmitted through afferent nerves and reflected to other portions of the vasomotor system I do not know.

The action of rectal injections of water as hot as the patient can bear, and the intravenous injections of saline solution at 118° or 120°, as recommended by Dr. Dawbarn, are virtually the same, and are among the most valuable agents in the treatment of surgical shock. The action is twofold: First, there is an influence on the vasomotor nerves, and, second, fluid is supplied to the blood vessels.

In nearly all cases of surgical shock, whether consequent upon abdominal operations or due to severe crushing injuries, there is a depleted condition of the circulation—in the one case due to the anæmia consequent on a long and exhausting illness, it may be, or in the other caused by hæmorrhage consequent on the injury. In both cases it is advisable to supply fluid to the system. In urgent or aggravated cases, where the danger is imminent, intravenous transfusion of hot saline solution is a remedy of inestimable value. The action, as I have said, is twofold: First, supplying the depleted vessels with fluid, and, second, the action of the heat on the vasomotor nerves. The first indication is met equally well by both methods, more rapidly by transfusion, but equally well, though more slowly, by rectal injection.

The second indication—namely, the action of heat on the vasomotor nerves—is met by the two methods in somewhat different ways and degrees.

Dr. Dawbarn, in advocating intravenous transfusion, stated that the saline solution should be about 118° or 120° F., as at that temperature the solution would act as a stimulant to the cardiac and arterial ganglia. Practically he was correct, but theoretically he was wrong.

Diluted by admixture with the blood, the temperature would be materially reduced, and a moderate degree of heat would be sedative. Fortunately, this is what we want. The hot saline solution, mingled with the blood, is brought into intimate relation with the ganglia of the cardiac and arterial muscles, and by its sedative influence on these ganglia promotes relaxation of the spasmodically contracted muscular fibers allowing an equalization of the blood supply and relieving shock.

If the water is introduced into the system per rectum it should be as warm as can be borne, and introduced through the long tube. In this way not only is water supplied to the depleted vessels, but the heat is brought up to the solar plexus, or near it, and exercises a sedative influence on that important aggregation of ganglionic cells and fibers.

Thus all remedies of greatest repute in the treatment of surgical shock bring the weight of their clinical evidence to the support of the theory that surgical shock is essentially a hyperirritation of the entire sympathetic nervous system.

Let me give a hasty resume of the manner in which I think surgical shock should be treated.

First, the inhalation of nitrite of amyl not only while the patient is on the operating table, but repeated at intervals until the full effect of other remedies is obtained.

Second, the hypodermic injection of nitroglycerin in doses that ordinarily would be almost toxic.

I think we often fail by not appreciating the severity of the arterial spasm that is to be overcome.

With this, if the case is not urgent, rectal injections of hot saline solution repeated as often as the bowel will tolerate it, and administered in such manner that the fluid will rapidly pass into the transverse colon. If the case be urgent, the fluid must be thrown into a vein. In my opinion, no remedy is of more value than hot saline solution thus administered.

Finally, sulphate of strychnia administered hypodermically in doses regulated by the indications of each case.

All drugs should be administered hypodermically.

In all cases about to undergo a severe operation I anticipate the occurrence of shock, and in a measure attempt to prevent it by the hypodermic administration just before the anæsthetic of one or one and a half grains of codeine, and am convinced that it has a very favorable effect.—N. Y. Journal of Obstetrics.

ON SIX CASES OF ADDISON'S DISEASE, WITH THE REPORT OF A CASE GREATLY BENEFITED BY THE USE OF THE SUPRARENAL EXTRACT.

By WILLIAM OSLER, M.D., F. R. C. P., (London).
Professor of Medicine Johns Hopkins University.

Nine cases of this rare affection have fallen under my observation. In two of these I made the dissection of the nerves and capsules.[1] A third case I reported in conjunction with Dr. J. C. Wilson in volume xiii. of the Transactions of the Philadelphia Pathological Society. The additional six cases, which I here give, have not been previously recorded.

Recent studies render it very probable that the original view of Addison is correct,—namely, that the symptoms of the disease are caused by loss of function of the adrenals. The evidence on which this is based is readily available in the elaborate Goulstonian Lectures of Rolleston,[2] in the address of Professor Schäfer[3] on Internal Secretins, and in a paper by Dr. Oliver.[4] On this view the disease is analogous in all respects to myxœdema, and is caused directly by the loss of the internal secretion of the glands. The comparison between these two diseases has frequently been drawn. As far back as 1885, in an article on Addison's disease in Pepper's "System of Medicine,"[5] I used the following words:

"The relation of affections of the thyroid gland to myxœdema and cretinism, and the experimental production of these conditions by the removal of the thyroid, have widened our view of the importance of the ductless glands. It is interesting to note the analogy between myxœdema and Addison's disease. In both there are distinct histological changes in the tissue—in one an increase in the mucin. in the other an increase in the pigment—and in both marked nervous phenomena: mental dulness, a progressive dementia in myxœdema, a profound asthenia in Addison's disease. We regard the thyroid as unimportant to life until the experience of surgeons and extirpation in monkeys by Horsley demonstrated that abolition of its function was followed by a serious train of symptoms; and perhaps the experimented removal of the suprarenals in monkeys—so much more closely allied to man than the animals hitherto experimented upon—may demonstrate that these little bodies are also not without their influence upon health.

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[1] Ross, Transactions of the Canadian Medical Association, vol. i., 1877, and Pepper, Transactions of the College of Physicians, Philadelphia, Series iii, vol. viii.

[2] British Medical Journal, 1895, vol. i.

[3] Lancet, 1895, vol. ii.

[4] British Medical Journal, 1895, vol. ii.

[5] Vol. iii. p. 947.

"Although the view of disturbed innervation consequent upon involvement of the abdominal sympathetic meets the case, theoretically, better than any other, and is at present widely held, yet there are signs of a return to the old view of Addison."

The analogy will be complete if it be found that in suitable cases the use of the suprarenal extract cures Addison's disease in the same remarkable way that the thyroid extract relieves myxœdema. Clinical workers may now contribute their share by carefully studying the effects of the extract in selected cases. Addison's disease is so rare that every opportunity should be seized. At the same time the greatest caution should be exercised, on the one hand, to select only well-characterized cases, and, on the other hand, to exclude cases in which the condition is a concomitant of widespread tuberculosis.

Case I.—Failing health for a year; attacks of faintness; bronzing of face and hands; sudden death. (Abstract.)

A. J., aged about forty, lawyer, consulted me in the spring of 1885, complaining of weakness and attacks of faintness. He was a healthy-looking, well-nourished man, of good family history. For about a year he had been overworked and worried, and had had at times dyspepsia. On one occasion, in court, he felt very faint and almost fell. On two or three other occasions he felt very weak and prostrated without any obvious cause. For nearly a year he had noticed a gradual darkening of the skin of the face and of the hands. At the suggestion of his physician he sought an opinion as to the existence of Addison's disease. The patient's general condition was so good, without anæmia, loss of flesh, or any signs of tuberculosis, and the pigmentation was so slight and limited, that doubt seemed reasonable. Dr. Pepper saw the case with me, and we agreed that the pigmentation and causeless fainting spells were, to say the least, suggestive, and we advised him to give up business for a year and live quietly abroad. He went home prepared to follow our advice, arranged his affairs, and made preparations for his trip, when one morning he dropped dead in a railway station. There was no autopsy.

Case II.—Gradual asthenia; progressive bronzing of the skin; attack of syncope; nausea and vomiting. Autopsy: cheesy foci at apex of left lung and in bronchial glands; tuberculosis of the adrenals; very slight matting of the semilunar ganglia nerves.

Nellie R., aged forty-one; admitted to the Philadelphia Hospital July 2. 1886, with great weakness and bronzing of the skin. Her father and mother both died of heart disease, one sister of dropsy, and one of heart disease. She had small-pox when a child; otherwise she had been a very healthy woman until a year ago, when she was attacked suddenly with great pain in the region of the heart and with dyspnœa. The distress lasted for at least three days. Until April of this year she has been in fairly good health, except that she seemed more languid than formerly and felt indisposed to work.

Last November her friends noticed that she was changing in color, and throughout the winter her normally fair complexion has been replaced gradually by a dark bronze. Three weeks before admission she had a sudden attack of syncope, preceded by dizziness in the head. Shortly afterwards she began to vomit after meals, and has done so almost every day since. She has had no pain anywhere.

Present Condition.—Small, somewhat emaciated woman. Face, neck, and hands deeply, general surface of the trunk slightly, pigmented. The bronzing of the face is extreme; it is interesting to note that on the forehead the deep small-pox scars are unpigmented. The skin of the abdomen is much darker than that of the thorax; the fingers are not clubbed; the nails are incurved; the pulse is 96, small and thready; the heart-sounds are clear and loud; there is slight flattening beneath the clavicles at both apices, and the percussion note is a little high pitched, and there are a few rales on deep inspiration. The abdomen is soft; no pain on deep pressure in the epigastrium; no tenderness on either side in the renal regions. There is no pigmentation of the mucous membrane of the mouth. The color of the lips is fairly good no anæmia; temperature 98° F.

The patient had most profound anorexia with great prostration, and once or twice vomited small quantities of blood. She gradually sank and died on the 13th.

Autopsy.—Body not emaciated; skin of face, neck, hands, and arms of a light bronze color; marked pigmentation of abdomen. On the inner surfaces of cheeks a dark patch on either side. Vaginal mucosa not pigmented; panniculus over abdomen three-fourths of an inch in thickness.

Peritoneum.—Adhesions between the surface of the liver and the diaphragm. The omentum is adherent to the wall of the pelvis. In thorax there are adhesions at the right apex and general adhesions at the left side. The heart contains fluid blood and clots. The valves are normal; the muscle substance is a little pale.

Lungs.—The left is crepitant except at extreme apex, and in two or three small areas of anterior margin, which show cheesy foci surrounded by gelatinous infiltration. The right lung is everywhere crepitant. The pleura is thickened, particularly at the apex. The bronchial glands are caseous.

Stomach.—Everywhere throughout the mucosa are small white bodies about two millimetres in diameter. There is pigmentation towards the pylorus; no erosions and no other special changes.

The spleen is of average size, closely adherent to the diaphragm, and the pulp looks normal.

The liver is small, united closely to the diaphragm. There are no tubercles, but in the adhesions on the right border is a small caseous body the size of a pea.

The intestines show no special changes except a slight enlargement of Peyer's patches and the solitary glands.

The suprarenals and sympathetic ganglia were dissected in situ.

The right splanchnic nerve is large, and a ganglion existed on it opposite the tenth dorsal vertebra. The left nerve is not so large and presents a smaller ganglion. The right nerve enters the semilunar ganglion, which is readily dissected, as it is not specially involved in cicatricial tissue. On the left side the ganglion is large, but also readily separated from the adjacent tissue. The nerves joining the two ganglia and those about the cœliac axis are less distinct than usual, owing to the slight matting of the tissue. The nerves passing to the suprarenals are free.

The capsules are not much enlarged. The right is six centimetres long, very firmly adherent to the liver and to the inferior cava. The left, six centimetres in length, is closely united to the kidney and to the spleen. On section the right capsule presents no trace of normal gland tissue. The lower half is occupied by a large cheesy mass, the central portion of which presents a grayish translucent, fibrous tissue. The remainder of the organ is made up of a similar tissue in which are small cheesy nodules. Behind the vena cava there is also a solid caseous mass. The left capsule presents a firm, cheesy nodule, just where its main vein emerges. The organ is flat and made up of a gray, translucent, fibrous tissue.

The kidneys are of average size. The left presents numerous small tubercles and one or two caseous masses which are in close proximity to the suprarenal capsules. In the pelvis the broad ligaments, ovaries, and tubes are closely matted together by old peritoneal adhesions.

The dissection of the nerves and adrenals is in the Mütter Museum of the College of Physicians in Philadelphia.

Case III.—Dyspepsia and occasional attacks of vomiting for two or three years; for some months gradual pigmentation of the skin and mucous membrane of the mouth; attacks of dizziness; extreme prostration and anæmia; profuse diarrhœa; urgent vomiting; death; no autopsy.

William S., aged fifty-nine, longshoreman; admitted June 30, 1887, to the Philadelphia Hospital, complaining of vomiting and great prostration. With the exception of yellow fever, in 1864, he had enjoyed very good health until three years ago, when he began to have dyspepsia and occasional attacks of vomiting. He has, however, kept at work.

For many months past (he does not know the exact time) he has himself noticed, and his friends have remarked, that he was becoming very dark in color. Eight days before admission he had an attack of dizziness, in which he fell but did not lose consciousness. Since then he has been extremely prostrated and the attacks of vertigo have become more frequent.

Condition on Admission.—Large, well-nourished man; slight œdema of the feet. Skin of the face, neck, and hands of deep mahogany brown. General surface of the body very much darker than ordinary; sclerotics are pearly. The lips are pale, and there is evidently marked anæmia. Mucous membrane of the lips and inner side of the cheeks deeply pigmented, and a large patch can also be seen on the soft palate.

The lungs are entirely negative: no rales at the apices; no dullness; no sign of old tuberculous disease. The apex-beat is in the fifth interspace. Pulse 96, small. There is a venous hum in the vessels of the neck; no hæmic murmur at the base of the heart.

There is marked pain on pressure over the tenth and twelfth ribs on the left side; none on the right. The blood showed the characteristic features of an extreme anæmia and the blood drop looked very watery. The count gave one million red corpuscles per cubic millimetre. Proportion of white to red one to four hundred.

The patient sank rapidly after admission; had profuse diarrhœa and urgent vomiting, and died July 6. The temperature ranged from 98.2° to 101.4° F. So far as could be ascertained from the patient himself and his friends, there had been no tuberculous disease in his family.

This is the only case of Addison's disease which I have seen with profound anæmia, a symptom on which Addison laid a good deal of stress. In a majority of the cases the blood count does not fall below fifty or sixty per cent. A difficulty sometimes arises in the diagnosis of the disease in cases of severe anæmia of the progressive pernicious type which have irregularly mottled pigmentation. I have recently seen a case in which, with the progressive anæmia there was a degree of asthenia and gradual pigmentation highly suggestive of Addison's disease.

Case IV.—Gradually developing languor and asthenia; frequent attacks of causeless vomiting; progressive pigmentation of the skin; convulsions; toxæmia; death. Autopsy: sclerosis and atrophy of the adrenals; no tuberculosis.

David A., aged fifteen and a half, a patient of Dr. Mullin's, of Hamilton, Ontario, who consulted me by letter about him, and who very kindly sent me the suprarenal capsules for examination.

The patient's father died at forty-five from pulmonary tuberculosis of four years' duration. The mother is a healthy woman; the brothers and sisters are healthy.

The boy had suffered from no serious illness in early life, and had good health until the onset of the present illness. In March he had a slight febrile attack, in which he was confined to bed for two days. Early in April his mother noticed that he appeared to be sunburned, and she thought it was due to wearing his Scotch cap too long in the spring. He seemed also languid and listless, and did not seem able to apply himself to study. Early in the summer he was taken from school, as he fretted and cried frequently on account of the scoldings. Ever since the attack in March he has had at intervals of three or four weeks attacks of vomiting, in which he brought up greenish and yellow matter, after which he felt better. In the summer the mother noticed that the skin became much more discolored. He was very indolent and took but little exercise and did not engage in any sports. His complexion was fair and his hair of a light color and thin, so that his discoloration, which deepened through the summer, was very marked. He had at times very severe headache, and sometimes acted strangely, as if silly.

His final illness is so graphically described by Dr. Mullin that I give his statement in full.

"On Monday of this week he complained of sickness and headache. On Wednesday he did not rise from bed; that night he slept and did not complain. On Thursday he was languid and stayed in bed; vomited a little green matter; said he had no headache, but had a bad taste; he was dull and heavy; his eyes appeared strange, and he acted as if he did not wish to be disturbed. About 2 P. M. he took a little oyster-soup; this was taken quickly, and then he turned to the back of the bed; later he vomited slightly. About 5 P. M. he would not answer questions; turned to the wall as if he wished to sleep. A little before 6 P. M. a convulsion occurred, not violent; the limbs were fixed; he was quite unconscious, face a little drawn, and slight frothing; the hands jerked slightly. After this he did not speak, except to say 'yes,' 'yes;' he would put out his tongue and open his mouth, and then turned away and moved to the back of the bed. A few minutes after the convulsion he was seen by a physician, who said that the movements were very similar to those of an hysterical patient. I saw him at nine o'clock the same evening. He was not unconscious, but did not seem able to fully understand. He moved to the front of the bed at my request, but soon turned and moved to the wall. The pulse was feeble and could not be counted at the wrist; the hands were cold; temperature in axilla, 100° F.; it had fallen one degree since taken after the convulsion. The tongue was a little furred, yellow; the breath seemed foul. During the night he was very restless, tossing from side to side and pulling the bedclothes. He passed urine once; at this time he asked for the vessel. The next morning I visited him at ten. The hands were cold, bluish, nails blue; pulse so feeble that it could not be counted at the wrist; heart-impulses, 132 per minute. Occasionally he made a deep sighing inspiration.

"The brownish discoloration of the skin very marked on the face, the shoulders, and anterior part of the thorax; the surfaces of the extremities discolored, but not so deeply; the integuments of penis and scrotum much darker than elsewhere, and the areola around each nipple was discolored as in pregnancy. Along the spinous processes from the level of the scapular spines to the sacrum was a row of ten spots about the size of a quarter of a dollar more deeply discolored than the surrounding skin. No pigmentation of the mucous membrane of the mouth; the breath was offensive; urine free from albumin and sugar.

"Until the afternoon he was very restless, pulling the bedclothes, and tossing about from side to side, and at 4 P. M. one-third grain of morphine was given hypodermically. After this he became more quiet, and when I visited him at 9 P. M. he was sleeping. He continued quiet during the night, and died the following morning about nine o'clock.

Dr. Mullin was kind enough to give me the opportunity of examining the suprarenals, sections of which I showed one evening at the Pathological Society of Philadelphia. Unfortunately, the specimens and sections of both this and the following case have been mislaid. Both capsules were extremely small, not half the normal size, and surrounded by much fat. They were firm, and on section showed no distinction between the medullary and cortical portions. Microscopically, there was a condition of diffuse sclerosis, with here and there areas of fatty degeneration. There was no tubercerlosis of the organs.

Case V.—Attacks of vomiting and indigestion for eight months; gradual pigmentation of the skin; intense prostration; death. Autopsy: tuberculosis of both adrenals; no involvement of other organs.

William B., aged nine, a patient of Dr. William E. Parke, of Philadelphia, Pa. The boy was at Girard College, and according to the doctor's statement he had seen him, on and off, for about eight months, during which time he had been repeatedly admitted to the infirmary with attacks of vomiting and indigestion, occasionally with a mild tonsilitis. His color had changed and he had become very much bronzed, but this was suggested to have been due to a dark ancestor. His last illness was characterized by most intense prostration and weakness, and obstinate vomiting. There was no elevation of temperature; the pulse had been rapid, but on the morning of his death it came down to forty.

I made the autopsy on March 28th, 1888. Unfortunately, the notes which I dictated to Dr. Parke at the time were mislaid. The skin was uniformly pigmented and about the color of a mulatto's. There was no enlargement of the lymph-glands; the heart and lungs were normal; no tuberculosis; no involvement of the lymph-glands in the abdomen; no changes in the stomach or intestine. The suprarenal glands alone were diseased. Both looked small; the right was larger than the left, and presented a flattened tuberculous mass about the size of an almond, the left a smaller mass in the upper part of the gland. There was no thickening or adhesion about the semilunar ganglion in the nerves passing to the glands.

Case VI.—Pulmonary tuberculosis; injury two years ago; dyspepsia; gradual asthenia; pigmentation, deepening for nearly two years; treatment for eight months with suprarenal extract; rapid disappearance of the serous symptoms; marked and persistent improvement in general condition; no change in the pigmentation.

William H., aged forty-six, sail-maker, admitted to the Johns Hopkins Hospital May 3, 1895, complaining of cough, shortness of breath, great weakness, and a change in the color of his skin.

Family History.—His father died of cholera morbus and his mother from the effects of a stone in the bladder. He had three brothers and two sisters, all of whom are dead. He does not know of what the brothers died. One sister died in confinement; the other from poisoning by mercury. He knows of no tuberculosis in his family, and none of his relatives have had discoloration of the skin.

Personal History.—When a child he had measles, diphtheria, chicken-pox, and mumps, and when about seventeen years of age, varioloid. In his sixteenth year he served on board a man-of-war at Panama, where he had a protracted fever of nearly four months' duration. Shortly after this he had jaundice for a month, since then he has never had a very healthy or natural-looking color of the skin. Ten years ago he had two attacks of severe pain in the hypochondriac and epigastric regions, lasting about five hours. He was doubled up with the pain and had to have morphine. The attack was not followed by either jaundice or chills. In July, 1893, the patient was run over by a wagon, the wheels passing over his abdomen just below the naval. He was laid up for two months, and suffered a great deal of pain in the abdomen. There was no paralysis afterwards, but he has not been very strong since. For two years the skin has been growing darker in color, and his friends have noticed that within the past five or six months the pigmentation has become much more intense. He has had at intervals throughout his life attacks of indigestion, and at times belching, but no vomiting. Twelve years ago he had an attack of diarrhœa, which lasted for a week. During the past two years he has lost very much both in flesh and strength, and for some months has had no ambition whatever for his work.

He is uncertain how long he has had a cough, but five weeks ago he began to have a great deal of cough with much muco-purulent expectoration. He has not had any pain, but he has suffered a great deal with shortness of breath on the slightest exertion, and he has the dyspnœa even when resting quietly in bed. There have been profuse night-sweats. He has been losing flesh rapidly, and has become very weak. The appetite is poor, but he has had no nausea and no vomiting. He has had no palpitation of the heart.

Present Condition.—The patient is a small-framed, poorly-nourished man; height about five feet, eight inches; present weight ninety-nine pounds. Temperature on admission was 101° F.; pulse, 136; respiration, 40. The eyes are sunken, and he looks very apathetic. One's attention is immediately attracted by the intense pigmentation of the skin, particularly of the face and forehead, which is of a uniform deep brown with irregular patches of a darker color. The lips and mucous membranes are not anæmic. On the roof of the mouth there are two patches of pigmentation; on the velum there is slight pigmentation; no spots on the lips, cheeks, or gums. The skin of the hands and wrists is of a very deep bronze color. The pigmentation is more marked in the axillæ and at the bends of the elbow. The areolæ of the nipples and the genitals are dark brownish-black in color. The general surface of the body shows a marked bronzing. There are areas of very deep pigmentation on the shins, and there is accentuation of the bronzing on either side of the great toes. The superficial glands are not enlarged. The epidymes and tests are normal. The pulse is regular, of medium volume, tension normal, the vessel wall slightly thickened.

The thorax is symmetrical, expansion slight, both clavicles prominent. The percussion-note is slightly impaired in the right front, and here from the second space there is a well-marked friction rub, heard throughout the mammary and axillary regions and around to the back, throughout the infrascapular area. At both apices behind there are a few fine moist rales. On the left side auscultation is negative. The sputum the day after admission was very abundant and frothy, containing a considerable quantity of greenish muco-pus, but tubercle bacilli were not found.

The apex-beat of the heart is in fifth interspace, just outside the nipple line. The sounds are everywhere clear.

The abdomen is somewhat retracted, nowhere tender; the border of the liver is not easily palable; no increase in the area of liver flatness. The spleen is not palpable; neither kidney can be felt.

There is no enlargement of the thyroid or of the lymphatic glands; no nodes or lesions of the bones.

From the date of admission to May 16, the patient's temperature ranged from normal to about 101° F. The pulse-range was from 120 to 130; respirations from 25 to 35. He expectorated about two hundred and fifty cubic centimetres of sputum, which was examined every other day for tubercle bacilli, but without result; and no elastic tissue was found. The patient has been in bed, and the general prostration and the rapidity of the heart-action have been out of all proportion to the amount of local disease of the lung.

On May 16 the treatment with suprarenal extract was begun. Thirty-six pigs' suprarenals were obtained at the time of slaughtering, cut up finely, thoroughly powdered with pestle and mortar, and to this mass about six ounces of pure glycerin were added, and the whole allowed to macerate for thirty-six hours in a refrigerator. The mixture was then filtered several times through fine-meshed gauze. The filtrate consisted of a reddish-brown syrupy fluid of a rather disagreeable odor. After filtering there were thirty-eight drachms of the extract, so that one drachm corresponded to a capsule. The patient began with half a drachm of the extract three times a day.

The patient's blood-count when he began the treatment was: red corpuscles, 4,564,000; leucocytes, 6,600; hæmoglobin, eighty-five per cent.

On May 20 tubercle bacilli were found in the expectoration for the first time. The cough and shortness of breath had been very much better. Prior to the treatment with the suprarenal extract the patient had gained one pound. The note by Dr. Thayer on May 24, eight days after beginning the use of the extract, was: The patient looks brighter and says he feels better. The pulse, which had ranged from 120 to 140, is now 100. He has gained three pounds in weight.

On June 6 the amount of the extract was increased so that he took the equivalent of three glands daily. Numerous careful blood-counts were made, and a differential count of the leucocytes. There was moderate leucocytosis; there were no nucleated corpuscles. The number of reds on June 6 was about 4,000,000 per cubic millimetre; leucocytes, 8,000.

After May 20 the patient's temperature remained normal.

During the week ending June 16 the patient gained five and a half pounds—a gain of nine and a half pounds since the use of the extract was begun. The patient continued to take the equivalent of three glands daily. A note by Dr. Thayer on June 19 is as follows: Temperature has been quite normal for more than a month. The pulse, which had ranged between 120 and 140 to the date of beginning the extract, has gradually fallen until during the last week the range was between 84 and 104. The amount of sputa has diminished to less than forty cubic centimetres in the day. The patient says he feels much better; his appetite is good, and he looks a great deal brighter. The condition of the lung has improved, and the friction murmur is no longer heard.

On June 28 tubercle bacilli were found. The treatment was continued throughout July and August, and in spite of the hot weather he improved progressively. The gain in weight was remarkable. In July his weight increased from one hundred and ten and a half to one hundred and fifteen pounds. In August, during the very hot weather, he lost again slightly in weight.

He left the hospital on September 10. The change in his condition had been very remarkable. When admitted he could scarcely walk to the bed, and was profoundly asthenic and emaciated. The general appearance had improved wonderfully; he was bright and active, and said he felt vigorous. His weight on discharge was one hundred and eighteen pounds, a gain of nineteen pounds. The pigmentation was unaltered.

Since his discharge he has been at work, and has reported at the hospital occasionally. He felt so well that throughout the latter part of November and December he remained without any of the suprarenal extract, and he lost three pounds in weight in that time. His condition to-day—January 15, 1896—is as follows:

The color is good. To me his face looks a little less pigmented, but Dr. Thayer, who had the patient in charge during the summer, while he was in the ward, does not think that there is any material change in the face, but thinks the discoloration is less intense on the trunk. It is still of a very advanced grade, such as is seen only in the most typical cases of the disease. The small patches of pigmentation on the palate have disappeared. The local condition in the lung has cleared, and there are now only a few rales to be heard occasionally on coughing. The friction is still audible just outside the right nipple. The change in the patient's general vigor is remarkable. He walks briskly, is active, energetic, in very good spirits, and says that he is as well as he ever was in his life.—International Medical Magazine.

PATHOLOGICAL SOCIETY OF LONDON.

Non-suppurative Ankylosis of Joints.

An ordinary meeting of the Pathological Society was held on February 18th, Mr. Butlin, President, being in the chair.

A discussion took place on the Pathology of Non-suppurative Ankylosis of Joints. It was opened by Mr. William Anderson, who said that the pathology of non-suppurative ankylosis was still incomplete and cases were often met with which our present theories of causation were insufficient to explain. Mr. Howard Marsh, in his address read before the British Medical Association in July last, led the way towards a better knowledge by recording a number of examples of the rarer forms of the condition, and it was with the object of reawakening discussion and educing further contributions from both physicians and surgeons that the present paper was read. Ankylosis was defined as a complete or nearly complete annihilation of the movements of a joint due to changes involving either the opposed surfaces of an articulation or the ligamentous and capsular structures investing. No separation was made between fibrous and bony ankylosis because the same injury might induce either condition, and a fibrous union might in time become osseous. As a tentative classification of the non-suppurative form it was proposed to divide the cases into two groups, according to origin: inflammatory and degenerative a. The inflammatory form might arise from (1) mechanical injury, either of an accidental nature, such as simple contusion, fracture extending into a joint, etc., or intentional, as in resections and arthrectomies (cases of ankylosis by contusion were quoted); (2) toxic elements conveyed by the blood, as in septicæmia (puerperal, typhoid, scarlatinal, etc.), gonorrhœal rheumatism, gout, "quiet" tuberculosis, and possibly in syphilis; and (3) affections of the nervous system—surgical injury as in case of division of nerves; disease, such as Charcot's rheumatoid arthritis, peripheral neuritis, and obscure neurosis. b. The degenerative form was exemplified by cases of (1) ossification of ligaments in rheumatoid arthritis and perhaps in other conditions, (2) forcible and long-continued pressure of one articular surface against another, as in the case of porters who carried heavy weights upon the head, and in extreme cases of lateral curvature; and (3) adaptive changes in ligaments around a joint that had undergone long immobilization. c. A third section must be reserved for obscure cases that could not as yet be classified with certainty. The following case was then read. The patient, a neurotic man aged thirty, had suffered since the age of ten from a series of articular lesions terminating in fibrous or osseous ankylosis. Each attack set in without apparent cause and without constitutional disturbance, and was characterized by moderate pain and swelling of a single joint, followed after a few months by more or less complete fixation of the articulation. In this way the right wrist, the right knee, the right ankle and tarsus, the left elbow, the right elbow and the right shoulder were successively invaded between the ages of ten and nineteen (inclusive), the ankylosis being osseous in the right knee, the right tarsus, the right shoulder, and apparently in both wrists, and fibrous in the other joints. Since the age of nineteen the attacks had been less frequent and severe, but the first phalangeal joints of both ring fingers and the left little finger had suffered, and within the last fortnight the left shoulder had become tender and painful. No osteophytic formations were apparent in any of the affected joints. In addition to the joint manifestations the patient was the subject of extreme hallux valgus (apparently independent of boot compression), a partial loss of power with stunting of growth of the right middle finger, and a vaso-motor paralysis of the skin of the right leg and foot. The patient was a very neurotic subject, but free from other disease and with a good family history. He had undergone a cuneiform resection of the right knee and a resection of the head of the right metatarsal bone. Various cases were related and preparations shown in illustration of the different headings of classification.

Mr. Howard Marsh stated that he had met from time to time with cases in which bony ankylosis had occurred without suppuration, slowly and quietly, and with no signs of active inflammation. These cases included: 1. Tuberculosis. He showed—(a) an elbow-joint in which there was complete synostosis between the humerus and the olecranon. The parts were removed by excision of the joint from a girl aged fourteen. There had been no signs of active disease, but the joint had gradually stiffened. Excision was performed by Mr. Walter Roughton, of New Barnet, to improve the attitude of the limb. (b) The os calcis and astragulus from a case in which Syme's amputation had been performed for tuberculous synovitis of the ankle-joint. No suppuration had occurred, but the two bones were absolutely synostosed. (c) The second and third cervical vertebræ firmly ankylosed by bone. No history of the case was known, but Mr. Marsh attributed the ankylosis to tuberculous disease. The bones were perfect in their outlines and were not eroded. He mentioned other cases in which bony ankylosis appeared to have occurred in cases of tuberculous disease where there had been no suppuration. 2. Gonorrhœal rheumatism. He had recently excised a knee-joint, distorted as the result of gonorrhœal rheumatism, and in which he found the femur and tibia firmly synotosed. He believed that bony ankylosis was met with in other septic affections unattended with suppuration, as sometimes after parturition and after acute infective periostitis or osteomylitis. 3. After mechanical injury. He instanced a case in which firm ankylosis, which appeared to be bony, had occurred after a severe fall upon the symphysis of the jaw. 4. In scoliosis. He showed three specimens, one from the Royal College of Surgeons of England and two from St. Thomas' Hospital. 5. Charcot's disease. Charcot himself had recorded a case of tabetic foot in which there had been no suppuration. He had found the first and second metatarsal bones ankylosed to the internal and middle cuneiform bones. Mr. Marsh had not himself met with ankylosis in tabes apart from suppuration, but Charcot's case seemed a clear illustration of this result. 6. After nerve injuries. Mr. Bowlby had placed in the museum of St. Bartholomew's Hospital a hand in which, after a division of the median nerve, bony ankylosis took place in one of the interphalangeal joints. 7. In gout. Of this he showed a clear example. 8. Multiple ankylosis of very obscure origin. He brought forward a case in which a young man aged twenty-two—whose original illness, which had occurred four years previously, was said to have been acute rheumatic fever—had complete bony ankolosis of both hips, both knees, and both ankle-joints. 9. In osteo-arthritis (so-called) of the spine. Here the different vertebræ were absolutely fixed together by bone as the result of ossification of the anterior common and other ligaments passing over the bodies and the ligaments of the neural arches. Mr. Marsh had found on microscopic examination that in all these cases alike ankylosis was effected by the development of true bone. In some of the cases he remarked a distinct irritant was in action—the tubercle bacillus, infective micro-organisms, the materies morbi of gout or mechanical injury. In some ankylosis followed an abnormal condition of the nervous system, while in a third group—that which included cases of multiple ankylosis—the cause at present seemed to be completely obscure. It was perhaps doubtful whether the cases which he had placed under the title of osteo-arthritis of the spine would, on further investigation, prove examples of that form of disease which was termed osteo-arthritis in the appendicular skeleton.

Mr. Davies-Colley referred to a patient who was lately under his care, a boy aged ten, with stiffness of the lower jaw. A year previously he had received a kick from a horse, which had caused great pain. On examination, it was found that movement of the jaw laterally and from before backwards had been lost, and this indicated that there was ankylosis of the part of the joint above the inter-articular fibro-cartilage. With regard to the ankylosis which resulted from gonorrhœal rheumatism he had described an acute form, affecting especially the ligaments of the joint and accompanied by redness and œdema over the joint and with extraordinary stiffness; both sexes were equally liable to the trouble. He called attention to a specimen which he had brought from the museum of Guy's Hospital, and which was more directly illustrative of the subject before them.

It was exhibited before the society by Dr. Fagge, and published in the twenty-eighth volume of the Transactions. It was one of synostosis of the posterior portions of the dorsal vertebræ and of the heads of the ribs, accompanied by ankylosis of one hip-joint. The patient was a man aged thirty-four, and he died from bronchitis. Dr. Fagge pointed out the absence of any signs of osteo-arthritis, but could give no opinion upon the actual pathology of the case. Judging from two cases which had fallen under his own observation and from the reports of certain cases exhibited at the Clinical Society of so-called spondylitis deformans, Mr. Davies-Colley was disposed to attribute this ankylosis to gonorrhœal rheumatism, although no mention was made in the medical report as to the patient having had gonorrhœa or not. He believed that in those patients with ankylosis of the posterior portion of the vertebræ, the disease had begun with an acute inflammation of the ligaments which had subsequently become converted into bone. Two such cases had come under his own observation. The first was a man aged thirty-two, whose case he brought before the society eleven years ago. The second was a man of about the same age, who was sent to him as a case of caries of the spine about eighteen months ago. He had the peculiar round, immovable back which characterized this condition, and, like his previous case, he had been for a considerable time exposed to damp and sudden changes of temperature; at the same time, he had suffered from repeated attacks of gonorrhœa. From the tenderness of the back, the small movement of the ribs, and the pain which seemed to him to be referable to pressure upon the nerves as they passed through the inter-vertebral foramina, he came to the conclusion that the ankylosis was in the posterior parts of the vertebræ and not in the bodies. These cases were so rare, and the records of post-mortem examination so scanty, that it was difficult to form any certain deductions from them. His own impression, however, was that they were primarily cases of acute gonorrhœal inflammation attacking the ligaments about the spines, articular, and transverse processes of the vertebræ. He believed also that the young men thus affected would be found to have a gouty or rheumatic family history, and to have been unusually exposed to cold and damp. Another peculiarity of the disease was that having once started, it appeared to go on, although the condition which had caused it was no longer in existence.

Dr. J. Griffiths (Cambridge) said that in the spinal column injury was frequently followed by ankylosis extending over two or three vertebræ. He showed a specimen of fracture dislocation in which both the inter-vertebral discs and the ligamenta subflava were converted into bone. He showed another specimen of ankylosis of the occipital bone to the atlas in which he believed that the ankylosis resulted from injury damaging the arch of the atlas. Another specimen, which he believed also to be due to injury, showed partial rotation of the atlas with ankylosis to the occipital bone and to the axis by the articular processes. Ankylosis, as a result of contusion or injury rarely occurred in the appendicular skeleton. Bony ankylosis of the spine frequently occurred in old age, and then the bodies of the vertebræ were found glued together in front and at the sides, but ossification of the anterior common ligament did not, as a rule, take place. He showed further specimens, in which the fifth lumbar and first sacral vertebræ were ankylosed by cancellous bone and there was ossification of the ligamenta subflava, of the articular processes, and of the sacro-iliac synchondrosis. He doubted whether the cause of this was osteo-arthritis, for none of the other changes characteristic of that disease were present. A specimen of ankylosis of four vertebræ in lateral curvature showed a general fusion of the bones, including the discs, but excluding the spinous processes. When destructive disease, such as tuberculosis was present in the spinal column, it was common to find that the laminæ and articular processes had become firmly united together. Cases of multiple ankylosis affecting the appendicular skeleton only, and running a definite sub-acute course, were interesting. He quoted the case of a young girl, aged twenty-eight, whose illness began with swelling and stiffness of the joints, without redness, going on for weeks, reaching a chronic stage and subsiding, leaving the joints stiff. He showed the bones of three feet in which there were no osteo-arthritic changes, but ossification of the periphery of the joints had occurred; the process was accompanied by a peculiar pitting of the articular surface of the joints. He regarded spondylitis deformans as merely the same disease beginning in the spinal column.

Dr. Pasteur showed a girl, aged sixteen years, who was suffering from pseudo-ankylosis of the joints of all four limbs from the elbows and knees downwards. The hip and shoulder-joints were not appreciably affected, but the temporo-maxillary articulations were distinctly involved. There also appeared to be considerable limitation of rotation in the dorsal and lumbar spine, though the movements of the head remained free. Little pain was complained of during rest, but attempts at passive movement had always caused more or less pain. The patient had first come under his observation in 1888, three years after the first onset of symptoms. The family and personal histories did not throw any light on the present affection. He did not believe that the process had been of an inflammatory type at any period of the disease. He had on no occasion been able to detect any effusion into the affected joints, or thickening of the articular ends of the bones, or any grating or cracking on passive movement. During the first two years, the patient complained of recurring attacks of painful swelling of the hands and feet without general constitutional disturbance, but no attack of this kind had been observed since she came under observation. Stiffening of the joints was first complained of eighteen months after the onset. All the joints in the affected limbs appeared to have been attacked simultaneously, and the wrists and ankles had suffered more severely than any of the others. The fixation of the various joints had been steadily progressive from the outset, and had kept pace with the remarkable atrophy and condensation of the soft parts of the affected limbs, which had taken place. He had satisfied himself that the fixation of the joints was due to the changes in the muscles and structures around the joints and not to primary changes in the joints themselves. From the first arrest of movement in the affected joints was caused by the stretching of the tendons passing over them. It was probable that the ligaments and connective tissue around the joints had become adapted to the altered conditions, and it was likely that they had, in common with other parts, been subjected to the trophic changes observed throughout the limbs. That the resistance to passive movement in the earlier stages of the condition was independent of the will, was proved by the persistence of the ankylosis under chloroform anæsthesia. From first to last he had entirely failed to obtain any evidence of alteration of sensibility in the affected limbs. The superficial and tendon reflexes were normal, and, apart from the remarkable clawing of the hands (which was suggestive of interosseal paralysis), there had been nothing to point to a peripheral or spinal lesion of motor nerves or ganglia. The electrical reactions of the affected muscles had always been those of health. Referring to the affection of the temporo-maxillary articulations, it was noteworthy that there also the joint affection was associated with some loss of facial expression, due most probably to loss of elasticity in the skin and condensation of subcutaneous tissues analogous to the condition obtaining in the limbs, the arms more particularly. The case was anomalous in so many respects that he felt some diffidence in venturing to give it a name. When the patient was shown before the Clinical Society, in 1889, its affinities to symmetrical diffuse scleroderma were noticed by several members, and he confessed that he was still, as he had been then, inclined to place it, temporarily at least, in that category.

Sir George Humphry said that in his remarks he would confine himself to those forms of non-suppurative ankylosis in which there was ossification of the parts on the exterior of the joint—external ankylosis. In these cases there was an ossification of the ligamentous tissues due to an abnormal excitation of the sub-periosteal bone-corpuscles in them. These normally underwent stimulation in the course of development, and thus produced the processes and ridges seen on the bones, as, for instance, the anterior intertrochanteric line on the femur or the ridge for insertion of the masseter on the lower jaw, or the ridges on the ventral aspect of the scapula. Sometimes these corpuscles might be stimulated abnormally, and thus lead to the production of bony processes between, among, or into the ligamentous tissues connecting bones or in relation with tendons. This ossification of ligament had its normal development in the case of the sacrum and in the normal ankylosis which occurred between the pre-sphenoid, the post-sphenoid, and the spheno-occipital vertebræ. This normal ossification was regulated by developmental laws, and rarely went beyond them, but the extension of this condition was liable to affect the whole vertebral column. In lateral and antero-posterior curves the arches and the articular processes would unite, ossification spreading from the bone corpuscles at the edges of the arches through the ligamenta subflava and thus uniting them one with the other. It usually occurred where the fibrous structure was subject to some amount of stretching, thus stimulating the bone corpuscles. He would call the process ossificatio fibrosa, and under it he would class all similar changes occurring in fibrous tissues attached to bone. The process spread along the margin on the articular surface, fusing the bones together; then the articular cartilages, having no function, disappeared and left the layer of cartilage bone which subtended that structure. The cartilage bone then gradually underwent absorption at points, and through these points shot up little bone processes from the subjacent cancellous tissue; these from opposite sides met and coalesced and thus the cartilage bone was removed and its place taken by cancellous tissue. What the cause was that excited the bone corpuscle, he was not prepared to say, but he thought that it was more nearly related to a rheumatic affection than to any other. It bore no semblance to Charcot's disease, or to nerve affection; and speaking on that point, he ventured to say, that the neural tendency was a little too strong upon the pathologist at present, who would scarcely admit to various other tissues their fair share in originating disease.

CREOSOTE CARBONATE IN THE TREATMENT OF PULMONARY TUBERCULOSIS.

By WILLIAM H. DUKEMAN, M.D.
of Los Angeles, Cal.

Reprinted from the Medical News, Philadelphia, Pa., December, 14th, 1895.

In recommending any remedial agent in the treatment of tuberculosis of the lungs nowadays, one must do so with great reserve, and he should be fortified with such facts as will bear out his assertions. So many medicines have been recommended of late for this disease that even the nonskeptical are becoming shy, and are again falling back on the old empiric treatment. One by one each new remedy has fallen by the wayside for other newer ones to be tried that have come into the market. Of the latter Creosote Carbonate takes its place at the head of the list, and from reports so far I think we are justified in giving it a prominent place in the treatment of the disease. In many cases, however, the physician, the pharmacist, or the patient is more to blame that a remedyfails rather than that the remedy itself is of no value. First, we must have a pure drug, then a system in its administration, and finally a dutiful patient to carry out in detail, systematically and thoroughly, everything advised. Without these precautions well followed up, no one should expect to be able to combat so destructive a disease.

In Creosote Carbonate the manufacturing pharmacist has succeeded in giving us a preparation of creosote that is nonpoisonous and nonirritant, and capable of being given in doses sufficiently large to produce a general systemic effect without any evil drawbacks. Creosote Carbonate contains 92 per cent. of the purest beechwood-creosote chemically combined with 8 per cent. of carbon dioxid. The preparation is a limpid, oily-looking solution, and remains in perfect solution for some time. As age or conditions of weather grow on it, it partially separates, forming a thickened, cloudy mixture, which, however, is readily overcome by placing the bottle in a water bath, keeping the water boiling until the temperature of the Creosote Carbonate reaches 210° F., which will sometimes take from twenty to thirty minutes or longer, when it will again resume its perfect normal solution, and remain so for a long time.

The remedy is expensive, retailing at $1 an ounce, by weight. In each of the several cases in which I have given the remedy a careful, systematic trial, every other detail in the treatment as to diet and hygiene being also thoroughly considered, I have had very marked improvement. These cases, however, were selected, none being in the far-advanced stage of the disease. The objective and subjective symptoms were well marked in all, and all had undergone other treatment by different physicians before coming under my care, as these patients were sent to this climate for their health. Two of these patients were under my care previously, at which time I then pursued an entirely different course of treatment. Both had previously taken creosote, from which they in both instances received very little benefit. While under treatment with Creosote Carbonate they have rapidly improved, and now continue to gain in weight. The advantage of Creosote Carbonate over the plain creosote is that it is completely assimilated, and can be given in much larger doses, and does not produce, in my experience, any ill effects. To prove that the drug is thoroughly assimilated, the skin and the breath eliminate the characteristic odor, and after long-continued use of the drug the urine presents the usual dark color and odor due to its presence in the urine.

The best mode of administering the drug is to drop it in the yolk of an egg, well-beaten up, and taken after each meal and before retiring at night. I also make use of the white of the egg by having it beaten up in a glass of milk, and taken between meals, with or without wine, as desired. I usually commence with 5 drop doses, and increase 1 drop a dose each day until the patient takes the amount necessary to produce the desired effect. When I arrive at the dose from which the patient himself notices marked improvement, I advise the continuous use of that dose for a week or two without increasing it, but then to again increase 1 drop a day for a week, or until marked signs of improvement again show themselves. The dose then remains uniform for some time. In this way I have had no reason as yet to give beyond 40 drops, although much larger doses have been given. I should not hesitate to increase the dose up to 60 drops should indications demand such a quantity.

As an illustration of the efficacy of this treatment I report the following case:

Mr. G., 33 years old, now a real estate agent in this city, came under my care two years ago. There was a history of tuberculosis in the family. Two years before coming to Southern California he was afflicted with malarial fever, and about one year later with right-sided pneumonia. A gradual decline in health followed, and he states that after six months his physician advised a change of climate to Arizona, explaining to him that his left lung was also slightly involved. For four months previous to coming here, while in Arizona, he took 10 drop doses of creosote in capsules t. i. d. Under this treatment he did not improve. After coming here he continued the creosote for a short time, and the change of climate resulted in a slight improvement in his condition, but for a short time only. He then discontinued all treatment. It was not long, however, before he again commenced to fail in strength, and his health again broke down. It was at this time that he consulted me. I made a thorough examination, and found the upper portion of the right lung and the apex of the left lung involved, well advanced in what I would term the second stage of the disease. Night-sweats were causing a great drain; there were harassing cough and free expectoration, in which many bacilli were present. I at once advised a complete change in his habits, his diet, hygiene, etc., and put him on 10 drop doses of creosote three times daily, and good tonics. He improved a little for a time. He was then manager of a clothing-house, and in this occupation he was advised to make a change. He went into the real-estate business to do outdoor work. With all changes made for his benefit he did not improve, and about ten months ago he had another attack of pneumonia involving the middle lobe of the right lung. This came near taking him "from this earth of misery," as he expressed it, and it was a great struggle for him to gain strength enough to get about. He lost 20 odd pounds in weight. Under the best of care with the former treatment he made very little improvement in general health or in the condition of his lungs. I then put him on Creosote Carbonate, commencing with 5 drop doses in the yolk of an egg, four times daily, and increased the dose until he was taking 15 drops at a dose. In less than two weeks there was marked improvement, and from this time on he has gained now over 20 pounds, or his former weight. Later he took 20, then 30 drops at a dose, and at present is taking 40 drops, four times daily, and beyond this dose there has been no indication for an increase. In less than two months of the Creosote Carbonate treatment he was able to resume work, and has been at active work every day since. He is gaining in strength and weight daily, and is again encouraged and confident that he may live a long and useful life for the benefit of his wife and four children.

The other cases have done equally as well if not better, but were not in so precarious a condition.

The minor details of treatment I pursue in these cases would require too much space to relate, but I would state that the personal habits of every patient are thoroughly investigated in every detail and all faults corrected, so that the patient actually lives a new life.* The Creosote Carbonate I hold, as it were, in reserve, and do not give it promiscuously.

In conclusion it may be said that although this climate is no doubt a helpful agent in the treatment of patients with pulmonary tuberculosis in its earlier stages, yet under other treatment they do not always show very marked gain, or what gain there is in many instances not continued; but under the Creosote Carbonate treatment the gain is of a more strengthening character and apparently will prove permanent.

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*See article on "The Hygienic and Dietetic Treatment of Consumption, with Reference to Southern California Climate," by Wm. H. Dukeman, in New England Medical Monthly, November, 1895.

ABSTRACTS.

Seven Cases of Laparotomy for Intussusception in very Young Children.

These seven cases of intussusception all occurred in infants under five years of age. Of these, four recovered, three died.

Case I.—Child, aged six months, had been vomiting, and had passed nothing but blood and slime from the bowels for a day. It was somewhat collapsed. There was an elongated tumor on left side of abdomen, and a mass felt by rectum.

Injection of warm oil failing to reduce the mass, laparotomy was performed. The tumor was found at splenic flexure of colon, and contained the cecum, ascending and part of transverse colon. It was reduced and followed by complete recovery.

Case II.—Child, four months old, suddenly turned white, drew up its legs, screamed and afterwards vomited, passed blood and slime from the bowels, which continued all day.

No distention of the abdomen or pain on deep palpation was found. Laparotomy was performed. The cecum was found invaginating the colon about three inches, and reduced without difficulty. The child died.

Case III.—An infant six months old was taken suddenly ill with vomiting, passing of blood and straining. It did not look very ill. There was slight distention of the abdomen and no tumor which could be felt.

An oil enema failed to relieve, and was followed by blood and slime. Laparotomy was performed. An intussusception was found on the right side caused by the cecum turned into the ascending colon. Reduced without difficulty. The child recovered.

Case IV.—A child four months old had cried with pain three days before admission. Soon afterward it began to pass blood, and vomited constantly. No definite tumor was felt by abdominal palpation, but a mass was felt by rectum. On opening the abdomen, the cecum, the ascending and descending colon were found in the rectum, and were reduced with difficulty. The cecum was very much congested and hard, and there was much gas. The child died from shock.

Case V.—A child aged four months, who had started with diarrhea, and became restless, crying from pain. Oil by mouth and an injection were given, resulting in a stool streaked with blood.

Resistance was felt in the left iliac fossa and a mass by rectum. A definite sausage-shaped tumor was felt under anesthesia on the left side of the abdomen.

A high oil injection partially reduced this.

On opening the abdomen the tumor was found in the transverse colon, and was reduced with difficulty.

Cecum, dark and hard.

Slow convalescence; recovery.

Case VI.—Child, Aged five months. History of diarrhea, vomiting, bloody and slimy stools like dysentery. A sausage-shaped tumor was felt on the right side of the abdomen which an oil enema did not reduce. On opening the abdomen, the tumor was found on the right side, and reduced. The appendix, having been injured, was removed. The recovery was satisfactory.

Case VII.—An infant aged four months had a sudden attack of pain, passing blood and mucus from the bowels. An elongated tumor was felt on the left side of the abdomen and by rectum. Laparotomy was performed.

The colon from ileo-cecal valve was found to be intussuscepted, and was easily reduced. The child collapsed, but recovered. It died four days later.

Of 73 cases of intessusception reported in the Lancet, 1888, 60 died, 13 recovered; 23 were children, of whom five recovered. There are records of 11 other recoveries from laparotomy for intussusception among children.

These statistics of recoveries indicate that very young children can bear the shock of an abdominal section, if attempted early enough, before the resisting power has been used up by repeated fruitless efforts to force back the bowel by enemas of oil or water.—Am. Medical-Surgical Bulletin.

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MEDICAL NEWS AND NOTES.

Dr. C. H. Tebault, Surgeon-General of the Army of Tennessee, has been appointed by General Gordon, commanding the United Confederate Veterans, to fill the vacancy occasioned by the death of Dr. Joseph Jones. He is made Surgeon-General with rank of Brigadier-General. The services of Dr. Tebault, beginning at Fort Pillow and continuing to the end of the war, are already well known and recorded by the historians of that period. We congratulate the veterans upon the appointment by their commanding officer.

The College and Clinical Record will hereafter be known under the name of "Dunglison's College and Clinical Record; a Monthly Journal of Practical Medicine."

The following is the programme of the American Medical Association, which meets at Atlanta, Ga., May 5th to 9th:

SECTION ON STATE MEDICINE.

The Section on State Medicine will meet in Room 15, Kimball House.

OFFICERS OF SECTION.

Charles H. Shepard, Brooklyn, Chairman.

Elmer Lee, Chicago, Secretary.

Executive Committee—L. H. Montgomery, Chicago; G. W. Stoner, Baltimore; C. A. Lindsley, New Haven.

Tuesday, May 5.

1. The State Care of Physically Defective Classes, Wm. E. Wirt, Cleveland, Ohio.
2. The Sanitary Control of Smallpox, S. L. Tepson, Wheeling, Virginia.
3. Preventive Medicine in Apoplexy, Ephraim Cutter, New York city.
4. Heredity as a Social Burden, A. W. Wilmarth, Norristown, Pa.
5. Hygiene versus Drugs, C. F. Ulrich, Wheeling, W. Va.
6. The Prevention of Smallpox, Elmer Lee, Chicago.
7. Drugs vs. Animal Viruses as Prophylactics, Reginald B. Leach, Paris, Texas.
8. A Plea for the Domestic Destruction of Garbage, N. E. Wordin, Bridgeport, Conn.
9. The Welfare of the Community Demands that Marriage Should be Regulated, Daniel R. Brower, Chicago.
10. Age and Sex Incidence of Mortality in Michigan, from Diphtheria and Croup, During Twenty-five Years, from 1870 to 1894; a Statistical Study, Cressy Wilbur, Lansing, Mich.
11. The Prophylaxis of Functional Nervous Diseases. John Punton, Kansas City, Mo.
12. A New Treatment of Phthisis, H. W. Mitchell, New York.
13. Pure Water, Frank W. Epley, New Richmond, Wis.
14. The Evil Results of Overstudy in the Young, Thornton Parker, Groveland, Mass.
15. Treatment of Insanity, S. V. Clevenger, Chicago.
16. Prevention of Infectious Diseases, J. M. G. Carter, Waukegan, Ill.
17. The Prophylaxis of Typhoid Fever, John Eliot Woodbridge, Cleveland, Ohio.

Wednesday, May 6.

18. Physicians as Pauperizing Agents; a Review of Some Neglected Points in State Medicine, Douglas H. Stewart, New York. To be read by Dr. Manley.

19. The Turkish Bath, etc., Forbes Winslow, London, England.

20. The Therapeutic Action of the Turkish Bath, V. Tagellski, London, England.

21. The Need of Public Baths, Charles H. Shepard, Brooklyn, N. Y.

22. The Prevention of War and the Promotion of Peace in Relation to State Medicine, Edward Davies McDaniel, Mobile, Ala.

23. Health Boards as Disturbers of the Peace, Charles McIntire, Easton, Pa.

24. The Inadequacy of Public Hygiene as a Means of Preventing National Physical Decay, J. H. Kellogg, Battle Creek, Mich.

25. The Physician's Duty to the General Public, J. W. Cokenower, Des Moines, Iowa.

26. Health Departments of Large Cities and their Organization, John B. Hamilton, Chicago.

27. The Methods of Drainage Now Prevailing in Some of Our Eastern Seaboard Municipalities Tending to the Production and Dissemination of Disease, Augustus P. Clark, Cambridge, Mass.

28. A Department or a Bureau of Health? Which? S. S. Herrick, San Francisco.

29. Some Thoughts Relative to a National Department of Public Health, F. E. Stewart, Detroit, Mich.

30. Progress in State Medicine in Pennsylvania, E. O. Bardwell, Emporium, Pa.

31. Should the State Provide Hospitals for the Treatment of Tubercular Patients? J. S. Jenkins, Tecumseh, Mich.

32. Serum Therapy in Some Diseases, G. T. Vaughn, P. A. Surgeon, M. H. S., Philadelphia.

33. Suicide: Three Cases, with Remarks, John L. Davis, Cincinnati, Ohio.

Thursday, May 7.

34. State Prevention and Cure of Inebriety, O. Evarts, College Hill, Ohio.

35. The Abuse of Alcoholic Drinks, its Relation to Public Health and its Prevention, W. Bayard, St. Johns, New Brunswick.

36. Recent Studies Relating to the Toxic Effect of Alcohol Upon the Nerve Cells, W. H. Riley, Battle Creek, Mich.

37. The Non-alcoholic Treatment of Consumption, O. G. Place, Boulder, Colo.

38. Hospital Management Without the Therapeutic Use of Alcohol, Sarah Hackett Stevenson, Chicago.

39. Twenty-one Years' Experience in the Non-alcoholic Treatment of Disease, J. H. Kellogg, Battle Creek, Mich.

40. What Constitutes True Clinical Experience in Medical Practice and its Relations to the Public Health, N. S. Davis, Chicago.

41. The Evolution of Medical Opinion as to Alcohol and Other Narcotics, I. N. Quimby, Jersey City, N. J.

42. The Proposed Permanent Badge for the American Medical Association, R. French Stone, Indianapolis, Ind.

43. Tuberculosis, Infection from Food, Charles E. Winslow, Los Angeles, Cal.

44. Modern Respiratory Advantages, W. T. English, Pittsburg, Pa.

Papers have also been promised by the following: T. D. Crothers, Hartford, Conn.; A. B. Judson, New York; W. T. English, Pittsburg, Pa.; C. H. Hughes, St. Louis, Mo.; G. F. Cook, Oxford, Ohio; Charles Winslow, Los Angeles, Cal.; G. E. Martin, Carthage, S. Dakota; Charles S. Sheldon, Madison, Wis.

We have received the following programme of the Third International Congress of Dermatology, to be held in London, August 4 to 8, 1896.

Tuesday, August 4th. Preliminary Business. 12 M.—Presidential Address. 3 P. M. Subject:—"Prurigo." 1.—Dr. Besnier (Paris). 2.—Prof. Kaposi (Vienna). 3.—Dr. J. C. White (Boston). 4.—Dr. Payne (London).

Wednesday, August 5th. 9.00 A. M.—Clinical Demonstration of Cases. 10.30 A. M. Subject:—"The Etiology and Varieties of Keratosis." 1.—Dr. Unna (Hamburg). 2.—Dr. H. G. Brooke (Manchester). 3.—Prof. V. Mibelli (Parma). 4.—Dr. W. Dubreuilh (Bordeaux). 10.30 A. M. Subject:—"Syphilitic Re-Infection." 1.—Prof. Fournier (Paris). 2.—Prof. Lang (Vienna). 3.—Mr. Alfred Cooper (London). 4.—Dr. Fitzgibbon (Dublin). 3.00 P. M. Papers.

Thursday, August 6th. 9.00 A. M.—Clinical Demonstration of Cases. 10.30 A. M. Subject:—"The Connection of Tuberculosis with Diseases of the Skin Other than Lupus Vulgaris." 1.—Dr. J. Nevins Hyde (Chicago). 2.—Dr. Hallopeau (Paris). 3.—Dr. Radcliffe Crocker (London). 4.—Dr. G. Riehl (Vienna). 10.30 A. M. Subject:—"The Duration of the Period of Contagion of Syphilis." 1.—Mr. Hutchinson (London). 2.—Prof. Campana (Rome). 3.—Prof. Lassar (Berlin). 4.—Dr. Feulard (Paris). 2.00 P. M.—Subject:—"Ringworm and the Tricophytons." 1.—Dr. Sabouraud (Paris). 2.—Prof. Rosenbach (Göttingen). 3.—Mr.

Malcom Morris (London). Many contributions to this debate promised.

Friday, August 7th. 9.00 A. M.—Clinical Demonstration of Cases. 10.30 A. M. Subject:—"The Nature and Relations of the Erythema Multiforme Group." 1.—Prof. de Amicis (Naples). 2.—Dr. T. H. Veiel (Stuttgart). 3.—Dr. P. A. Morrow (New York). 4.—Dr. Stephen Mackenzie (London). 10.30 A. M. Subject:—"Malignant Syphilis." 1.—Prof. Handlung (Copenhagen). 2.—Prof. Neisser (Breslau). 3.—Prof. Tarnovsky (St. Petersburg). 2.00 P. M.—Clinical Demonstration of Cases. 3.00 P. M. Papers.

Saturday, August 8th. 9.00 A. M.—Clinical Demonstration of Cases, followed by Papers.

Note.—The Congress has been fortunate enough to secure for its use the building known as Examination Hall, on the Victoria Embankment. This will afford every facility for all kinds of demonstrations; cases, pictures, museum, etc. Special efforts are being made to have large clinical demonstrations of cases, and all who have been in London know how rich is the material there.

It is of the greatest importance that those intending to join the congress should notify the secretary, Dr. J. J. Pringle, 23 Lower Seymour street, London, W., of their intention as soon as possible. The membership fee is $5.00, which should be sent in the form of one pound Sterling draft on London, or P. O. order to the same amount. Geo. Thos. Jackson, 14 East 31st street, New York, Secretary for the United States.

A Typhoid fever epidemic at Elmira has been reported with a somewhat startling death-roll. It is asserted that the sewage of a number of towns and cities is poured into the Chemung river, which can have only one effect—namely, that of polluting and poisoning its water. Ice, too, is cut from that river and used at Elmira. It is a well-known fact that freezing does not destroy the poisonous germs of ice made from polluted water. We assume that here are ample causes for this outbreak of an infectious disease, which is recognized as preventable.

The prompt action of the health department in Buffalo has served to check a threatened epidemic through infected milk. A milk dealer was detected in delivering infected milk. He was prevented from further service to his customers and so the spreading of the disease was cut short. Had the health department of Elmira taken similar precautions, sickness and death to an alarming degree might have been prevented. These two lessons of cause and effect—of infection and prevention—teach their own moral.—Buffalo Medical Journal.

We give in full in this issue the preliminary programme for the meeting of the American Medical Association at Atlanta, in May of this year; The time, the place and the event are worthy of the generous support of the medical profession. We do not doubt that the papers alone will justify the trip, nor do we hesitate to predict that the meeting will be as productive of good work as any of its predecessors. The following are the officers this year:

President, Dr. R. Beverly Cole, California; Vice-Presidents, Dr. J. J. Chisolm, Maryland; Dr. J. C. LeGrand, Alabama; Dr. A. P. Clarke, Massachusetts; Dr. T. P. Saterwhite, Kentucky; Secretary, Dr. W. B. Atkinson, Pennsylvania; Treasurer, Dr. H. P. Newman, Illinois.

Following are the officers of sections for this meeting:

Practice of Medicine—Wm. E. Quine, Chicago, Ill., Chairman; DeLancey Rochester, Buffalo, N. Y., Secretary.

Surgery and Anatomy—C. A. Wheaton, St. Paul, Minn., Chairman; W. L. Estes, So. Bethlehem, Pa., Secretary.

Obstetrics and Diseases of Women—J. Tabor Johnson, Washington, D. C., Chairman; Reuben Peterson, Grand Rapids, Mich., Secretary.

Ophthalmology—Lucien Howe, Buffalo, N. Y., Chairman; Frank Alport, Minneapolis, Minn., Secretary.

Laryngology and Otology—G. V. Woolen, Indianapolis, Chairman; M. R. Ward, Pittsburg, Pa., Secretary.

Diseases of Children—A. C. Cotton, Chicago, Ill., Chairman; A. J. Work, Elkhart, Ind., Secretary.

Materia Medica and Pharmacy—F. E. Stewart, Detroit, Mich., Chairman; W. B. Hill, Milwaukee, Wis., Secretary.

Physiology and Dietetics—H. Bert Ellis, Los Angeles, Cal., Chairman; Henry Salzer, Baltimore, Md., Secretary.

Neurology and Medical Jurisprudence—T. D. Crothers, Hartford, Conn., Chairman; W. J. Herdman, Ann Arbor, Mich., Secretary.

Dermatology and Syphilography—L. D. Bulkley, New York city, Chairman; T. C. Gilchrist, Baltimore, Md., Secretary.

State Medicine—Chas. H. Shepard, Brooklyn, N. Y., Chairman; Elmer Lee, Chicago, Secretary.

Dental and Oral Surgery—R .R. Andrews, Cambridge, Mass., Chairman; Eugene S. Talbot, Chicago, Secretary.

The address of welcome will be delivered by Professor William Osler, of Baltimore. The address on Surgery will be delivered by Professor Nicholas Senn, of Chicago, and Professor Geo. H. Rohe, of Baltimore, will deliver the address upon State Medicine.

The Chairman of the Committee of Arrangements is Dr. W. F. Westmoreland, Atlanta. The local Secretary is Dr. J. McF. Gaston, Jr.

The headquarters for visiting members and delegates will be the Hotel Aragon and Kimball House. The general sessions of the association will be held in the Grand Opera House. Halls for meetings of the sections have been secured.

American Orthopedic Association.—Below we present the preliminary programme of the tenth annual meeting of the American Orthopedic Association to be held at Buffalo, N. Y., May 19, 20, and 21, next.

The president's address will be made by Dr. Royal Whitman, New York, after which the following papers will be read:

"Some Practical Points in the Treatment of Lateral Curvature of the Spine," by Dr. A. B. Judson, New York.—"Some Etiological Factors in Lateral Curvature of the Spine," by Dr. E. G. Brackett, Boston.—"Cases Illustrating the Absurdity of Treating Ordinary Lateral Curvature (Scoliosis), by Spinal Supports," by Bernard Roth, F. R. C. S., London.—"The Rationale of Gymnastic Exercise and Pressure Correction in the Treatment of Scoliosis," by Dr. L. A. Weigel, Rochester.—"The Rapid Cure of Rotary Lateral Curvature of the Spine and Other Postural Deformities by Means of Thorough Development, and Corrective Exercises with heavy weights. With a Demonstration of the Method," by Dr. Jacob Teschner, New York (by invitation).—"A Simple and Efficient Brace for Lateral Curvature," by Dr. S. L. McCurdy, Pittsburg.—"Congenital Misplacement of the Femur Anteriorly," by Dr. DeForest Willard, Philadelphia.—"Further Remarks on Congenital Dislocation of the Hip," by Bernard E. Brodhurst, F. R. C. S., London.—"Report of a case of Double Congenital Dislocation of the Hip, treated by the Lorenz Method of Operation," by Dr. Reginald H. Sayre, New York.—"The Cure of Congenital Dislocation of the Hip by Means of the 'Functional Weighting' method, without Open Operation," by Dr. Adolph Lorenz, Vienna.—"Spontaneous Dislocation of the Hip," by Dr. William J. Taylor, Philadelphia.—"The Treatment of Club-Foot: (a) When to commence treatment and how; (b) the indications for mechanical treatment; (c) the limitations of mechanical treatment; (d) the indications for operative treatment; (e) results in 343 operations performed by the writer," by Dr. A. M. Phelps, New York.—"Investigations on Flat-Foot," by Dr. E. H. Bradford, Boston.—"Mechanical Support for Flat-Foot," by Dr. John C. Schapps, Brooklyn.—"The Anterior Transverse Arch of the Foot," by Dr. Joel E. Goldthwait, Boston.—"Injuries of the Tarsus and the Ankle Joint," by Dr. J. D. Griffith, Kansas City.—"Subtendinous Exostosis," by Dr. E. G. Brackett, Boston.—"The Mechanical Treatment of Ingrown Toe Nail," by Henry Ling Taylor, New York.—"The Operative Treatment of Paralytic Deformities of the Foot with Particular Reference to Arthrodesis," by Dr. V. P. Gibney, New York.—"Some Mechanical Problems in the Treatment of Pott's Disease," by Dr. John C. Schapps, Brooklyn.—"The Operative Treatment of Threatening Abscesses in the High Dorsal Region," by Dr. E. H. Bradford, Boston.—"The Treatment of Pott's Paraplegia, with a Report of Two Cases," by Dr. Le Roy W.

Hubbard, New York.—"Osteomyelitis of the Spine," by Dr. T. Halsted Myers, New York.—"Suppuration in Joint and Spinal Disease and its Relation to Tubercular Meningitis. An Analytical Study," by Dr. Samuel Ketch, New York.—"A Study of the Action of Iodoform Glycerin in Tubercular Osteomyelitis," by Dr. Harry M. Sherman, San Francisco.—"Joint Disease in Infancy," by Dr Augustus Thorndike, Boston.—"The Use of Dry Heat of High Temperature in the Treatment of Chronic Joint Affections," by Dr. William E. Wirt, Cleveland.—"A Theory of the Ultimate Etiology of Deformity and its Practical Application," by Dr. Royal Whitman, New York.—"The Probable Cause of the Limp in the First and Second Stage of Hip-Joint Disease," by Dr. Harry M. Sherman, San Francisco.—"Femoral Osteotomy for Correction of Hip Deformity in Adults with a Report of Cases," by Dr. A. R. Shands, Washington (by invitation).—"A Report of Cases of Osteosarcoma of the Hip," by Dr. Arthur J. Gillette, St. Paul.—"Division of the Hamstring Tendons by the Open Method for Correcting Malposition and Securing Rest in Tubercular Disease of the Knee," by Dr. Bernard Bartow, Buffalo.—"Tuberculosis of the Wrist and Carpus," by Dr. James E. Moore, Minneapolis.—"Symptoms and Treatment of Slight Knock-Knee in Children." by Dr. Robert W. Lovett, Boston.—"Two cases of Dislocation of the Patella Treated by Operation," by Dr. Joel E. Goldthwait, Boston.—"Some Notes on Spastic Paralysis in Children," by Dr. F. S. Coolidge, Chicago.—"Some Recent Modifications in the Treatment of Congenital Wry Neck," by William Adams, F.R.C.S., London.—"Contracted Fingers," by Dr. Arthur J. Gillette, St. Paul.—"Congenital Club-Hand, the Report of a Case Treated by Operation," by Dr. C. E. Thompson, Scranton (by invitation).—"Rare Cases from Practice," by Dr. A. J. Steele, St. Louis.—"A Report of Some Cases of Unusual Congenital Deformities," by Dr. John Ridlon, Chicago.—"Congenital Defects of the Long Bones, a Report of Cases and Operations," by Dr. B. E. McKenzie, Toronto.—"Deformities of the Humerus due to Rickets," by Dr. Augustus Thorndike, Boston.—"A Report of a Family of Anomalies," by Dr. S. L. McCurdy, Pittsburg.

Kansas Medical Society.—The following programme of the Kansas Medical Society, which will hold its annual meeting at Topeka, Kan., May 13, 14, and 15, is announced:

OPHTHALMOLOGY, OTOLOGY, AND RHINOLOGY.

"Some Remarks Concerning Glaucoma." Dr. J. H. Thompson, Kansas City, Mo.—"Catarrhal Deafness." Dr. W. W. Campbell, Atchison.—"Some Pupillary Phenomena; Normal and Pathological." Dr. E. E. Hamilton, Wichita.—"Clinical Significance of Anosmia." Dr. E. B. LeFevre, Abilene.—"Mastoid Abscess Complicated with Lateral Sinus Thrombosis and Diabetes." Operation—Recovery. Dr. G. A. Wall, Topeka.—"Intubation—Report of Case." Dr. P. D. Hughes, Kansas City, Kan.—"Clinical Cases." Drs. Minney and Magee, Topeka.

SURGERY.

"Foreign Bodies in the Alimentary Canal." Dr. L. Reynolds, Horton.—"Antiseptic and Aseptic Surgery." Dr. P. Daugherty, Junction City.—"A Clinical Demonstration of Sayres's Method of Applying Plaster-of-Paris Jackets for the Relief and Cure of Pott's Disease." Dr. E. E. Liggett, Oswego.—"The Surgical Treatment of Puerperal Septicemia." B.

J. Wetherby, Hutchinson.—"The Surgery of the Gall Bladder." Dr. J. W. Perkins, Kansas City, Mo.—"Stone in the Bladder: Lithotomy or Lithoplaxy? Which and When?" Dr. S. E. Sheldon, Topeka.—"The Bacillus Tuberculosis in Knee Joint." Dr. J. A. Lane, Leavenworth.—"Operation for Gall Stone, with Specimen." Dr. S. Murdock, Oneida.—"Empyema." Dr. Geo. M. Gray, Kansas City, Kan.—"Recent Progress in Orthopedic Surgery." Dr. D. D. Wilson, Nortonville.—"Alveolar Abscess—Report of Cases." Dr. D. J. Moyer, Junction City.

GYNECOLOGY.

"The Success of Conservative Treatment." Dr. T. C. Biddle, Emporia.—"The Use of Gauze as Drainage in Abdominal and Pelvic Surgery." Dr. Milo B. Ward, Topeka.—"Report of Cases." Dr. H. H. Sutherland, Herington.—"Prolapsus Uteri; Its Cause and Treatment." Dr. C. E. Pontius, Fairview.—"The Most Fruitful Cause of Uterine and Ovarian Disease." Dr. C. C. Seabrook, Burlingame.—"Diagnosis of Intra-Abdominal Neoplasms." Dr. A. H. Cordier, Kansas City, Mo.—"Obstetric Forceps." Dr. L. J. Cunkle, Madison.

MEDICINE.

"Diagnosis and Treatment of Diphtheria. Dr. D. Y. Graham, Nortonville.—"Tobacco, Considered from an Esthetic and Hygienic Point of View." Dr. M. M. Ochiltree, Haddam.—"The Need of More First-Class Medical Men." Dr. S. S. Glasscock, Kansas City, Kan.—"Little Things in Medical Practice." Dr. F. C. Herr, Ottawa.—"The Future of Medical Colleges in the Smaller Cities of the United States." Dr. Daniel Morton, St. Joseph, Mo.—"The Blood Serum Therapy." Dr. S. G. Stewart, Topeka.—"Alcohol Not a Stimulant." Dr. W. L. Warriner, La Cygne.—"Tertiary Syphilis." Dr. R. E. McVey, Topeka.—"Quackery." Dr. G. P. Marner, Marion.—"Municipal Medicine." Dr. J. L. Gilbert, Topeka.—"The Medical Man on the Witness Stand." Hon. J. G. Waters, Topeka.

The corresponding secretary is G. A. Wall, M. D., Topeka, Kan.

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REVIEWS.

Infantile Mortality During Childbirth And Its Prevention. By A. Brothers, B. S., M. D. the William Ferness Jenks prize essay of the College of Physicians of Philadelphia. Philadelphia: P. Blakiston Son & Co., 1012 Walnut Street. Price $1.50. The fact that this essay received in competition the prize offered by the trustees of the William Ferness Jenks prize fund, would seem to be a sufficient high testimonial to the character of the work. The object of the present essay, says the author, is to make a careful bird's-eye view of the entire subject, without attempting to give a detailed account of everything, as required in text books, and to point out the advance made in recent years in the interests of the unborn child previous to labor, during the critical hours of actual labor, and in the earliest period of life succeeding labor. The book is full of information gleaned from the recent literature, largely articles published in the numerous periodicals. Its arrangement is interesting and logical. After discussing the causes of infantile mortality, he takes up that due to maternal causes preceding labor and during labor, then that due to fœtal causes preceding, during and following labor. The book is full of interest throughout, and is a tribute to American scholarship.

We have received Merck's Index for 1896, an encyclopedia for the physician and the pharmacist, stating the names and synonyms; source or origin; chemical nature and formulas; physical form, appearance and properties; melting and boiling points; solubilities; gravities and percentage; strengths; physiological effects; therapeutic uses; modes of administration and application, regular and maximum; dosage; incompatibles; antidotes; special occasions; hints on keeping and handling; methods of testing; market values, and so on; of the chemicals and drugs used in medicine in chemistry and in the arts. Price $3.

The Year Book of Treatment in 1896. A critical review for practitioners of medicine and surgery. 12mo, 484 pages. Cloth $1.50. Philadelphia, Lea Bros. & Co., Publishers, 1896.

The following pamphlets and reprints have been received:

Modern Surgery of Serous Cavities. A paper read before the Eighth Annual Convention of the National Association of Railway Surgeons, at Chicago, May 1895. By Merrill Ricketts, Ph. B., M. D. Cincinnati, Ohio. Reprinted from The Railway Surgeon, Monadnock Block, Chicago.

The Theory and Treatment of Rheumatism, by Louis Faugeres Bishop, A. M., M. D., New York. Clinical Assistant College of Physicians and Surgeons; Secretary Society of Alumni, St. Luke's Hospital; Member of Academy of Medicine, etc., with discussion by William H. Draper, M. D., Beverly Robinson, M. D., Robert W. Taylor, M. D., and William H. Thompson, M. D. Reprint from the Medical Record, February 1, 1896. New York: The Publishers' Printing Company, 132, 134, 136 West Fourteenth Street. 1896.

Inflammation of the Uterine Appendages (Salpingitis) by Solomon G. Kahn, M. D., Leadville, Col., late House Physician at St. Mark's Hospital, New York city. Reprinted from the Medical Record, October 5, 1895. New York. Trow Directory Printing and Bookbinding Co., 201-213 East Twelfth street. 1895.

Notes on a Series of One Hundred Consecutive Operations for Appendicitis, by Robert T. Morris, M. D. Reprint from American Medico-Surgical Bulletin. February 22, 1896.

Report of a Case of Dislocation of the Testicle into the Penis, by

Ramon Guiteras, M. D., New York. Reprint from the Medical Record, January 4, 1896. New York.: The Publishers' Printing Company, 132, 134, 136 West Fourteenth street. 1896.

A Case of Bi-Nasal Hemianopsia following Cranial Traumatism. By Percy Fridenberg, M. D., Assistant-Surgeon New York Eye and Ear Infirmary, etc. (With two illustrations) Reprinted from the N. Y. Eye and Ear Infirmary Reports, January, 1896.

Diagnostic Palpation of the Female Pelvic Organs. By George M. Edebohls, A. M., M. D., Professor of Diseases of Women, New York Post-Graduate Medical School; Gynecologist St. Francis Hospital; Consulting Gynecologist St. John's Hospital.

Middle Ear Operations as a Means of Improving the Utility of the Organ of Hearing. By E. B. Dench, M. D., New York, N. Y. Reprinted from the Transactions of the American Otological Society, 1894.

The Prostate. Some of its acute and chronic conditions, and their treatment, with remarks upon the cause of enlarged prostate, by L. Bolton Bangs, M. D., of New York, Consulting Surgeon to St. Luke's, the City and the Methodist Episcopal Hospitals, formerly Professor of Genito-Urinary Surgery in the New York Post-Graduate Hospital. Reprinted from the Vermont Medical Monthly. Burlington Free Press. 1896.

The Demilt Dispensary, in the City of New York. Forty-fifth Annual Report, etc., for year 1895. New York: George F. Nesbitt & Co., Printers and Stationers, corner Pearl and Pine streets. 1896.

The Sensory Nervous System in Diagnosis. The Reflexes. A contribution for college students. By Chas. H. Hughes, M. D., Professor of Neurology, Psychiatry and Electrotherapy in Barnes Medical College of St. Louis. Reprint from Alienist and Neurologist, January, 1896. Press of Hughes & Co., 310 Locust street, St. Louis, Mo.

Angiokeratoma of the Scrotum; Raynaud's Disease of the Ears; Lupus, Erythematosus, Disseminatus, disappearing during Pregnancy. By J. A. Fordyce, M. D., Professor of Dermatology and Syphilology, Bellevue Hospital Medical College; Visiting Dermatologist to the City Hospital, etc. (Reprinted from the Journal of Cutaneous and Genito-Urinary Diseases for March, 1896.) New York: D. Appleton and Company, 72 Fifth Avenue. London: Caxton House, Paternoster Square.

What is the Value of Operative Interference in the Treatment of Epilepsy?—Based on an analysis of seventy cases taken from contemporaneous literature. By Edwin Gaillard Mason, M. D., of New York city; Lecturer on Mental and Nervous Diseases, New York Polyclinic. From the Medical News, March 21st, 1896.

Diagnosis and treatment of diseases of the rectum, anus, and contiguous textures. Designed for practitioners and students. By S. G. Gant,

M. D., Professor of Diseases of the Rectum and Anus, University and Woman's Medical Colleges; Lecturer on Intestinal Diseases in the Scarritt Training-School for Nurses; Rectal and Anal Surgeon to All-Saints, German Scarritt's Hospital for Women, and Kansas City, Fort Scott, and Memphis Railroad Hospitals, to East Side Free Dispensary, and to Children's and Orphans' Home, Kansas City, Mo.; member of the American Medical Association, National Association of Railway-Surgeons, the Mississippi Valley Medical, the Missouri Valley Medical, and the Missouri and Kansas State Medical Associations, etc., etc. With two chapters on "Cancer" and "Colotomy" by Herbert William Allingham, F.R.C.S.Eng., Surgeon to the Great Northern Hospital; Assistant Surgeon to St. Mark's Hospital for Diseases of the Rectum; Surgical Tutor to St. George's Hospital, etc., etc., London. One Volume, Royal Octavo, 400 pages. Illustrated with 16 Full-Page Chromo-Lithographic Plates and 115 Wood-Engravings in the Text. Extra Cloth, $3.50 net; Half-Russia, Gilt Top, $4.50 net. The F. A. Davis Co., Publishers, 1914 and 1916 Cherry street, Philadelphia; 117 W. Forty-Second street, New York; 9 Lakeside Building, Chicago.

The field of rectal text books is probably as little crowded as any other of the special subjects; and even if it were more so, a book which gives as good illustrations and has as much common sense as the one now before us, must command considerable support from the profession. The author has had considerable experience in a limited time, and he has exhibited ingenuity in the construction of more than one surgical implement. His coadjutor, Dr. Allingham, has written two chapters on a subject about which a younger practitioner would be less apt to be able to give opinions upon which to build a prognosis or a personal decision. The result is that the composite whole makes a book which is sufficiently full of facts to be entertaining; which is liberally enough supplied by wood and by colored illustrations to leave no doubt as to measures recommended; which contains, moreover, two new departures in such a work—railroading as an etiological factor in rectal diseases, and auto-infection from the intestinal canal—and we believe that the work compares favorably with anything in its class which has been previously produced. One statement is of interest to us in regard to the treatment of hæmorrhoids. The author says "We are free to admit that this operation (ligature) is a very good one indeed, and that the results have been as good as from any other yet devised. At the same time, we believe that there is one other operation, to be described presently, that will be followed by just as good results, from which patients suffer much less, recover more quickly, and with as few bad results as follow the ligature. We refer to the clamp and cautery operation." This is not the place to take up the contention as to the points of vantage or disadvantage of these two methods; but we are willing to predict that if any of the rectal gentlemen will have a personal experience of the clamp and cautery, and will then have a personal experience of the most approved clean, clear, surgical ligature, the contention will not be so fierce for the advantages of the former method.

Coca and its Therapeutic Application, by Angelo Mariana, with illustrations. Third edition. New York, J. N. Jaros, 52 West 15th street, 1896.

Transactions of the First Pan-American Medical Congress, held in the City of Washington, D. C., U. S. A., September 5th, 6th, 7th and 8th, A. D. 1893, in two parts. Washington, the Government Printing Office, 1895.

The two volumes, each of over a thousand pages, from the press of the government printing office, have just been published, and present to the profession the work done by the first Pan-American Congress. They reflect no less credit on the Secretary General, Dr. Charles A. L. Reed, than did his indefatigable work which resulted in bringing together such a brilliant array of medical men, with such a large number of valuable and interesting contributions to the progress of medical science. The resolution by which these volumes are printed, states that 2,000 copies are for the use of the Senate, 4,000 for the use of the House of Representatives, and 5,000 for distribution by the Department of State. We mention this, in order that our subscribers may know how to obtain copies of this most valuable work, namely, through their Senator or Representatives. Many of the papers have appeared already; but the compilation of all the papers presented at the Congress makes a valuable book of reference on a great range of subjects. A number of the papers are published in Spanish, the articles are generously illustrated, and the work as a whole is most acceptable.

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Scientia et Veritas Sine Timore.

M. E. GAILLARD, (PUBLISHER.)

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THE RELATION OF THE RÖNTGEN PHOTOGRAPHY TO THE DIAGNOSIS AND TREATMENT OF FRACTURES.

Will the new photography improve our methods in the diagnosis and treatment of fractures? A most natural question that offers itself in view of the various illustrations which have already appeared in the medical journals. May not the precision with which the relation of the bones is pictured, necessitate unusual care and thoroughness on the part of every surgeon, in order to attain results which may be demonstrably satisfactory to an ordinary jury? Already more than one suit has been instituted and the X rays (so-called, because up to the present time their essence is unknown) have been called into requisition in order to support the claim of one or another contestant. In a recent issue of the British Medical Journal an X ray picture shows the bones of the upper extremity far from being in apposition. The application of the photography to the discovery of solid bodies lying either in tissue or in bone, has been made in a great many large cities. The facility with which the rays penetrate dressings and soft tissues ought to suggest their availability in determining the exact position of fragments. More especially is this true with injuries of the elbow-joint, where frequently an untoward result, due to the rotation of one of the fragments—generally the broken condyle of the humerus—could be avoided in all probability by an operative procedure which could not in any other way be justified. Moreover, the questions arising in regard to the effects of extension as well as the existence of a fracture in a doubtful case, ought to be easily settled in this way. Of course, we are yet in the infancy of this form of photography. The resources of the ingenious mind are cleverly demonstrated in the New York Medical Journal for March 14th, in which a Röntgen picture is reproduced showing the bones of the hand without flesh, and the bones themselves almost entirely penetrated by the rays. This was taken with a static machine and a vacuum tube having tinfoil electrodes, and without a converter, by Dr. William J. Morton, who says, "Now that Crookes tubes are beginning to arrive or to be constructed in this country, I am also using them in the usual manner with the coil and converter; but it will ever be a source of pleasure to me to feel that the inability to obtain the Crookes tubes forced me to perfect and bring forward the use of the static machine and of very simple vacuum tubes, and my present opinion is that it may be possible on these lines of work to excel the present results which can be secured with the Crookes tube itself."

Sydney Rowland, B. A., reports to the British Medical Journal for March 14th, efforts to photograph foreign bodies in the larynx, lesions of the elbow, imbedded gall-stones—all more or less successful. In the last named the rays penetrated the whole body. He then adds a case of sarcoma of the tibia, demonstrated by the rays, as well as some illustrations reported by J. Lawson Russell namely, a needle in the wrist, tubercular disease of a phalanx, and a case in which the rays showed no glass to be present. One or two recent issues of journals have been largely taken up with experimental work in this direction. The long exposure necessary, the cost of the apparatus, and the difficulty in easily bringing together the necessary paraphernalia, will probably make it a little while before the general application of this photography to the diagnosis of fractured conditions shall be the rule and not the exception. Whether it will add to our resources in treatment, remains yet to be shown.

A SUIT FOR DAMAGES.

An editorial in the British Medical Journal for March 14th takes up the question of professional advertising and draws "some useful object lessons" from the action of Dr. Kingsbury against the British Medical Journal. "When we opened our columns," says the editor, "to the discussion of medico-theoretical subjects, we did so for the benefit of the profession at large, and for the special guidance of the medical men themselves who asked our advice on points of medical etiquette or personal difficulties. It will not be denied that we have acted with the utmost good faith toward our correspondents, strictly preserving their incognito and taking on ourselves whatever risk might result from their communications. We are afraid that in too many instances we cannot pay our correspondents the compliment of saying that they met us in the same spirit." The editor then goes on to call attention to the necessity for extreme accuracy in the statement of facts, in order "to enable the Journal to pronounce an authoritative opinion." He then says that although the Journal is in a sense public, its circulation is practically limited to the medical profession, and as a result, the opinions are more freely given and expressed than would be the case in an ordinary newspaper. The difference of opinion of the medical men in Manchester who were called upon to testify, doubtless had a great deal to do with the decision against the Journal. Dr. Renaud said he found it difficult to say where "lamb ends and mutton begins," and that in this view Dr. Kingsbury had not transgressed the rule in regard to advertising. "If, however," the Journal goes on to say, "in reference to Dr. Renaud's opinion the question is asked of the Journal 'who made you a ruler and a judge over us?' we reply emphatically, the medical profession." "No one can read the questions submitted to us every week, on subjects of medical ethics and medical etiquette, without seeing that the profession has deliberately invited the Journal to accept the responsibility of dealing with them, and we believe that the ordinary practitioner is grateful to the Journal for accepting a most troublesome, and in some cases, as the recent trial shows, costly responsibility. We cannot believe that, notwithstanding Dr. Renaud's difficulty in defining where lamb ends and mutton begins, he would have approved of a course mainly conducted on the lines that the publication of a medical man's name, title or address, by an insurance office as their medical referee, or a recital of his opinions and publications in the medical directory, constitute professional advertising. We shall have done good service to the profession if we have made this question of advertising an urgent one for the qualifying bodies and the general medical council to decide. We have recently on several occasions in the British Medical Journal drawn attention to the unfortunate distinctions which can be drawn between the medical and legal professions, in the conduct of their common interests, to the great disadvantage of the former. The recent trial extenuates our observation in this respect. It shows the apparent impossibility of obtaining any agreement between medical men as to a code or standard of medical etiquette. If every man is a law unto himself, and there be no settled law, there necessarily must be confusion, liable at any time to produce ill feeling among the individual members of the profession."

The difficulties in regard to medical advertising are not confined to the other side. Often innocently some of our most conservative men are made to appear to be seeking notoriety and advertisement in the daily press. The woes of one who has received more or less advertisement of this sort are set forth in a recent issue of the Medical Record. In it are given some of the various ways in which a reporter is able to fill newspaper space at the expense of a reputable man. The writer referred to says, "I have received enough newspaper attention to equip me pretty well for a narrative of personal experience in this matter, so kindly listen for a moment. The only case that ever came to me, directly or indirectly, from newspaper sources, was one in which I was threatened with malpractice suit later." He then goes on and shows how certificates are taken or given without the authority of the person chiefly concerned. "Recently," he says, "a person of scientific attainment asked me to help him by making observations on the action of a new preparation, and stated that a very responsible firm had kindly offered him laboratory facilities. The subject was well worthy of attention, but after a great amount of painstaking experimentation I handed him in perfectly good faith a series of notes which showed that the material was likely to prove valuable in some kinds of cases, that it was inert in others, and that it was definitely harmful in cases of malignant neoplasm, some ten or twelve cases of this kind having been excited to rapid development in fourteen days of experimentation. The one exception was a case of cancer of the uterus, with laceration of the vagina, in which the laceration feature of the case had disappeared under treatment with the preparation in question. I had no suspicion that my notes were likely to be published, and, in fact, would not have thought that they contained anything that the manufacturers would want to publish; but in a short time a pamphlet appeared containing my statement that I had cured cancer with their product."

The writer thinks that the County Medical Society hardly needs to prohibit such advertising by a by-law. "There is not" he says "a physician in America whose reputation can stand against it, and the by-law is superfluous." The whole question, if brought back to first principles, seems to involve the spirit and belief with which a man has entered upon the study and practice of medicine. To one who looks upon his profession of medicine as a high calling: to one who gets from the daily practice the highest degree of satisfaction, a satisfaction absolutely and entirely devoid from any pecuniary returns: to one for whom the greatest pleasure consists in an effort to improve the means by which life may be prolonged, to improve himself in the means already offered for such purposes: to such a one it is not likely that the desire for publicity will outstrip his determination to obtain and retain the high regard of his professional brethren.

How far the necessities for existence may turn a man from his enthusiasm in his profession, we are not prepared to say. How far the personal element plays its part in the individual case, the case itself alone can tell. The difficulties in the way of legislation for such cases seem as far from their solution to-day, as they were when the profession became a distinct branch of science.

In our last issue we had something to say in regard to the obligations of a medical man to preserve the confidence of his patients. It was à propos of the Kitson matter, and we referred in that editorial to a class of cases which often put the honest practitioner into a compromising position, if not into one fraught with considerable danger to his professional reputation. We declared that even in such cases, while a medical man had a right to Provide against any possible misconstruction of his relation to the case, we still believe that the confidence of his patients was sacred. A recent case in New York city has developed the fact that we have a coroner, Dr. Theodore K. Tuthill, of whom the profession and the public ought to be proud: the former, because we can feel that the confidence of medical men will be respected; the latter, because they can feel that their personal griefs and afflictions will not be unnecessarily paraded in the public press. Not only this, but the coroner has deserved especial commendation, and has earned the unanimous support of all people, for the manly, straightforward way in which he has frankly stated his own position, and has not, as has so often been done, shifted upon one of his subordinates the responsibility in the case.

The facts are these. A gentlewoman who had been unfortunate in a number of ways, had her misfortune culminate in acute insanity, during which she took her own life. There was absolutely nothing in the case that could be of general interest, except to a maudlin diseased public whose mind had long been filled by such stories of misfortune. There was nothing sinister, nothing dark, nothing hidden, that a prurient press by bringing to light could further the cause of justice or humanity. The coroner frankly declared; "Why should I not try to conceal it? Must the griefs of every family be brought before the public? Has the coroner no right to use his discretion in matters of this kind? I can only say that I am glad that the story did not become public through this office, and I wish I could put my finger and a gun on the man who gave it out for publication. He betrayed a confidence, and I may have something to say to him later. I am going to have the matter of the coroners using discretion in what they give out for publication brought before the Board of Coroners."

It is unfortunate that the high standing taken by this most excellent medical gentlemen was defeated in its purposes in the present case; but if

It is unfortunate that the high standing taken by this most excellent medical gentlemen was defeated in its purposes in the present case; but if the result terminates by establishing the right of coroners to exercise discretion in the matter of publication, medical men will feel more confidence and respect for the office, and will more frequently and more willingly lend their assistance and coöperation to the accomplishment of its best ends. We may add that a later meeting of the Board of Coroners has unanimously endorsed the position taken by Dr. Tuthill, as well as his action upon the case cited. The law directs that the records be available for "legal purposes:" and the board does not place the same estimate of the aid of a sensational press in the accomplishment of legal ends, as do the gentlemen who earn a livelihood by their energy and ingenuity in suggesting possible but improbable infringements of the law while they hold up to public scandal and derision in a family already harrowed by the bitterest pangs of grief: in short, the coroners believe that the regularly constituted legal authorities can look out for the law, while the coroners use their discretion in what they distribute to the public.

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ORIGINAL ARTICLES.

THE PRINCIPLES OF PRESCRIPTION WRITING.*

BY EUGENE LEE CRUTCHFIELD, M.D.

Many physicians entertain an erroneous idea in regard to the value of a knowledge of the principles of writing prescriptions correctly and they fail to recognize the importance of being governed by these underlying rules of action. The average doctor seems to believe that it makes no difference how careless he may be in this matter provided that his patients recover in a reasonable time; at least, an examination of his prescriptions would lead one to the conclusion that such is his opinion. To the educated physician having a conscientious regard for the observance of that which is right, it is both distressing and ludicrous to peruse the prescriptions found upon the file in any city pharmacy. It is amusing because of the glaring mistakes that confront the eye and shock his sense of propriety. Illegible writing, faulty orthography, careless abbreviations, incompatibilities, misplaced punctuation marks, and a lamentable ignorance of the rudiments of the Latin tongue and even of his vernacular language, abound on every hand. It is sad to think that in a profession ordinarily considered learned one is associated with so many ignoramuses. It is a melancholy reflection that the medical colleges will matriculate, much less graduate, men whose educational advantages have been so limited and whose intellectual processes are conducted in so careless a manner. The authorities of our medical institutions apparently ignore the fact that the profession for which they train men is one requiring minds whose discipline has been of the most rigid order; that it is a calling in which the most accurate modes of thought will be imperatively demanded. Before I thought of studying Medicine a copy of the Register of Harvard University happened to fall into my hands. Great was my surprise to find therein the statement that physicians are the most uncultured of all those belonging to the so-called learned professions. My experience has shown to me the truth of this assertion. I wish here to enter my protest against such a state of affairs. It is a burning shame that medical colleges will admit and graduate men of that calibre.

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* A lecture delivered before the students of the Baltimore University School of Medicine, Jan. 30th, 1896.

In no way is the ignorance of a physician more easily revealed than by the manner in which he writes his prescriptions. Nor is this a matter of indifference to him. It is a fruitful theme of comment among the druggists, and in many instances they do not scruple to convey their impressions to patients. In addition, the man who writes his prescriptions carelessly, is very likely to be a superficial thinker. This means that he is an unsafe medical adviser. Moreover, were there no other motive for inducing him to exercise due care in this matter, the fact that we should do the right simply because it is the right, would be sufficient. A man who disregards this principle is not conscientious, and it is axiomatic that such an one is unfit to be a member of the medical profession. He is not a proper person to have human lives entrusted to his care.

The subject of prescription-writing embraces; first, the formation of prescriptions which treat of the ingredients of which they are formed and the manner in which these component parts are combined, and second, the correct method of expressing the physician's order so that the druggist will have no difficulty in interpreting it. Both of these divisions are of equal importance. While it is evident that a prescription should call for the proper remedies to meet the indications of the case and that these should be selected in such a way that when combined no chemical, pharmaceutical, or physiological incompatibility should exist, it is also manifest that however careful a medical man may be in this respect, unless he writes his prescriptions clearly, the druggist is in danger of compounding the wrong articles and thus the life of the patient will be jeopardized.

In regard to the formation of prescriptions it may be stated that they are of two classes. These are those that indicate at a glance the diseases for which they are intended and those which do not thus reveal the nature of the complaints for which they are ordered. To illustrate: A prescription such as the following would suggest syphilis to the mind of every one possessing any knowledge of medicine:

℞ Hydrargyri Chloridi Corrosivi............gr. j
Kali Iodidi ....gr. lxxx
Syr. Sarsap. Comp.... .. .. }
Aqua.. .. .. } āā ℥ iv
M Sig. ℥ ss ter in die.

No one need be informed that the following is useful in the treatment of the malarial cachexia:

℞ Liq. Sodii Arseniatis.................. ♏lxxx
Tr. Cinchonae Comp.................. ℥ ij
Ext. Eucalypti Fl...................... ℥ ss
Tr. Nucis Vomicae.................... ʒ ij
Aquae Cinnamomi q. s. u. f.............. ℥ iv
M Sig. ʒ ij ter in die.

Whenever possible, it is better to pattern our prescriptions after this order. Sometimes, however, the condition of the patient may be somewhat anomalous. He may have a complication of diseases; or his trouble may be well defined, but still present one or two symptoms out of the usual course. Under such circumstances an extemporaneous prescription is called for containing such ingredients as will meet the different indications. For instance: I recently prescribed for a gentleman suffering with intestinal dyspepsia. Ordinarily a prescription composed of pancreatine, bicarbonate of sodium, ipecacuanha, and quinine, would answer. In his case there was some diarrhoea, and therefore subnitrate of bismuth was added to this combination. Again, I was called a few weeks ago to see a man in the last stage of phthisis pulmonalis. He had been taking cod-liver oil, compound syrup of hypophosphites, etc., to combat his malady. At this visit, however, I prescribed a mixture like the following: Carbonate of ammonium and whiskey as stimulants, bromide of sodium and bromide of ammonium to overcome his extreme restlessness, with simple syrup and peppermint water as flavoring agents. Such a prescription would obviously have no influence over his complaint. It was ordered merely to meet certain indications. Permit me to give another illustration. Last summer I myself was taken ill. I sent for my friend and former preceptor, Prof. Alfred Whitehead, M. R. C. S. London, who informed me that I had pleurisy on the right side. In addition to experiencing pain in that region, I had been vomiting and purging during the day. He ordered a mixture of English chlorodyne, subnitrate of bismuth, mucilage of acacia, and peppermint water. Here was a prescription not directed against any special disease, but suited to the various features of the case. The chlorodyne relieved the pleuritic pain, while the muriate of morphia which it contained also acted as an astringent, and thus helped to control the diarrhoea, and the bismuth served as an astringent and soothing agent to the mucous membrane of the gastro-intestinal tract, thus checking both emesis and diarrhoea.

In considering the subject of the formation of prescriptions it must be borne in mind that every such formula consists of four component parts. These are the superscription, the inscription or body, the subscription, and the signature.

The superscription consists of the initial sign ℞ the name of the person for whom the medicine is intended, and the date. The sign ℞ represents the Latin word Recipe, meaning take thou. It is a direction to the pharmaceutist to take the specified quantities of the drugs named. There is, however, a remnant of superstition still lurking about this emblem. Originally it was the sign of Jupiter, made thus ♃, and placed at the top of the formula to propitiate the king of the gods, that the compound might act favorably.

It is highly important to write the name of the patient at the top of the prescription. It is a matter of convenience to the druggist, and since it frequently happens that several prescriptions are left at a pharmacy by different persons at or about the same time, all of which are to be sent home by the proprietor, it will prevent many a mistake and possibly save many a life if every prescription bears the name of the patient for whom it is intended. While it is not so important to write the date, it is well to do so. It may help to prevent the druggist from making a mistake. It is an easy thing for the physician to do, and in a profession like ours, in which the responsibilities are so great, we should avail ourselves of every safeguard.

The inscription or body consists of one or more of the following subdivisions: Basis or chief ingredient, Adjuvant which assists the action of the basis, Corrective to prevent some injurious effect of the other ingredients, and lastly the Vehicle or Excipient to give it bulk or form or both. In the following prescription for gonorrhoea we have an example of each of these subdivisions:

℞ Zinci sulphatis	gr. vj
Acidi carbolici	gtt. ix
Morphinae sulphatis	gr. vj
Aquae	℥ iij

M Sig. Inject three or four times daily.

Here the sulphate of zinc is the basis. By virtue of its astringent property it will check the abnormal discharge. The carbolic acid is the adjuvant. On account of its germicidal effect it assists the sulphate of zinc by destroying the gonococcus of Neisser. The sulphate of morphia is the corrective. It is ordered to overcome the pain which we would otherwise expect from the use of carbolic acid and sulphate of zinc. Lastly, the water is the vehicle. In this instance it gives both form and bulk to the medicament.

"A prescription may, however, contain the basis alone, or the basis with the adjuvant, or the basis with a simple vehicle or diluent. A single ingredient may serve a double or a treble office, as the Aromatic Syrup of Rhubarb with Quinine, in which the syrup serves as an adjuvant to increase the action of the quinine, as an excipient to cover its taste, and as a vehicle to facilitate the administration of the dose directed. Again, the basis may need no aid in doing its work, and may require no corrective of its action, nor any special vehicle. On the other hand, there is no limit to the number of ingredients which may be used, provided that the prescriber has a clear idea of something to be accomplished by each one, and also provided that there is no chemical or medicinal incompatibility between them. Formerly prescriptions were very complex, and contained a great many curious and incongruous ingredients. As Dr. Piffard well says, 'the tendency of the present age is towards mono—rather than polypharmacy, and prescriptions with the orthodox adjuvans and corrigens are less frequently seen than formerly.' There is danger, however, in carrying this simplicity too far, for there is no doubt but that proper combinations of medicines will often produce effects for the patients good, which could not be obtained from the use of any one remedy."

It would be a task of supererogation to state that incompatibilities are, as a rule, to be guarded against. Of these there are three kinds; chemical, pharmaceutical, and physiological. Chemical incompatibles are those agents which when brought into juxtaposition produce a new chemical compound. Carbolic acid and Glauber's salts (sulphate of sodium) are chemically incompatible. They form the sulpho-carbolate of sodium. Nitrate of silver and common salt (chloride of sodium) also belong to this class. They form the chloride of silver. Pharmaceutical incompatibles are those which present some physical disassociation; for example, resinous tinctures or fluid extracts with aqueous solutions, tincture of guiac with sweet spirits of nitre, etc. Physiological incompatibilities exist when drugs having antagonistic therapeutic effects are prescribed together. Atropine and pilocarpine illustrate this point. Aconite and digitalis are physiological incompatibles.

While it is the rule to avoid the use of incompatibles, there are some exceptions. The familiar lotio hydrargyri nigra (black wash) shows that when we design to form a new chemical compound, it is perfectly allowable to employ incompatibles. This is composed of calomel and lime water, and by their action upon each other the black oxide of mercury is formed. Yellow wash is another illustration of this principle. It is made by mixing corrosive sublimate and lime water and thus we obtain the yellow oxide of mercury. A familiar and useful formula for the treatment of gonorrhoea is the following:

℞ Zinci sulphatis ....gr. viij
Liq. plumbi subacet. dil............. ℥ iv
M Sig. Use as an injection.

Bartholow says in regard to this prescription that "a chemical change, of course, takes place, but clinical experience is in favor of the combination."

Belladonna and opium are antagonists, but they are often advantageously combined. Both relieve pain and both are antispasmodics, so that when used conjointly each assists the other in promoting these desirable ends. They are, however, the physiological antidotes of each other so far as the effects on the cerebrum, the pupil, the heart, the respiration, and the arterial tension are concerned. Therefore by combining them we obtain the good effects of both without the unpleasant features of either. Thus it will be seen that an incompatible is sometimes called upon to assume the role of a corrective.

Pharmaceutical incompatibles claim less attention than either the chemical or the physiological. Of course, it is important to have our mixtures as attractive in appearance, taste, and smell as possible, but there are other considerations of so much greater weight that we may frequently disregard a slight pharmaceutical incompatibility. Then, too, to lessen this unpleasant feature we have at our command such articles as powdered acacia, mucilage of acacia, honey, etc. Moreover, articles which in a liquid state are pharmaceutically incompatible, may often be combined, in a solid form, in a pill or a powder, without regard to this physical disassociation.

We now come to the subscription. This consists of the directions for the compounder which are generally expressed in abbreviated Latin. The most common terms embraced under this head are as follows: Misce (mix), contracted into M; Fiat (singular) and fiant (plural) meaning make or, more literally, let there be made, usually represented by ft; Pilula (pill) or pilulae (pills); Capsula (capsule) or capsulae (capsules); Charta (a paper or powder so designated because a powder is merely enveloped in a paper) or chartae (plural); Mistura (mixture); and Haustus (a draught). Thus we frequently encounter the following directions for the druggist:

M. Ft. Pilulae ....no. x. M. Ft. Capsulae ....no. vj.
M. Ft. Chartae ....no. xij. M. Ft. Haustus. M. Ft. Mistura.

(The last two forms are rare in this country but, I believe, are common in England.) In England we also see such expressions as Misce et fiat pilula and Misce et divide in pilulas xij.

The last component part of a prescription is the Signature. This consists of the instructions for the administration of the medicine followed by the signature of the prescriber. The instructions may be given in either Latin or English. I believe that in Great Britain the Latin tongue is generally employed for this purpose. At this point I am reminded of an incident that was related to me by Prof. Whitehead. When he came to America he continued to write the instructions in Latin, just as he had done in his native country. One day he met a druggist who said to him, "Doctor, I wish that you would write your directions in English. My partner doesn't understand Latin." In this country English is the language more frequently used for this purpose, although such phrases as ter die or ter in die (three times a day), post or ante cibum (after or before meals), and pro re nata (as occcasion may require), are common.*

In regard to the signature of the physician, we generally see simply his surname given; for instance, King. It would be better, however, were he to write it out in full, thus Ebenezer J. King. To give but his last name looks like an attempt to avoid responsibility, especially if his is one of those rare cognomens like Brown, Jones, or Smith. In that case, if his first name is John and he were to write even that out in full, he might give the most ludicrous or dangerous prescription almost with impunity, for the chances are that the druggist would not know which one of the hundred John Browns, or which one of the five hundred John Joneses, or which one of the thousand John Smiths wrote it. The point that I desire to emphasize is this: We should be as explicit as possible in this matter. It frequently happens that in the hurry of writing a prescription the doctor makes some serious mistake. The conscientious druggist will always consult the prescriber before compounding such a prescription, and, of course, it is highly important that he should know who he is and where he is to be found.

We now come to the consideration of the correct method of writing a prescription. Under this head, let me say, "Never rely entirely upon the memory when attempting to write a prescription." Do not memorize certain formulae for different maladies and then put them into writing at the bedside. Such a plan is not safe. It may not involve any special danger when the writing of prescriptions for external use is concerned, but it is hazardous to do so if the medicine is to be taken internally. The proper method is to notice the indications to be met, select the drugs best suited to the case, determine upon the number of doses which you will order, decide how large a dose of each ingredient you will give, and then it will be an easy matter to estimate the quantity of each drug that the prescription will contain. In this way you will be more apt to avoid mistakes, whereas if you rely upon your memory, you will be very likely to give an overdose of some drug.

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* Whether written in Latin or English the instructions are always preceded by the Latin word *signa* (meaning *mark* or *write*), often abbreviated *Sig.* or *S.*

Let me illustrate this plan: you are called to a case of pneumonia in the first stage. The patient has a temperature of 102° F. or 103° F. a severe pain underneath the nipple of the affected side, dyspnoea, cough, and increased expectoration. You decide to give a mixture like the following: Tr. veratri viridis, which being a powerful arterial sedative will reduce the temperature; compound tincture of cinchona, which is a tonic and also possesses some antipyretic property; acetate of potassium, which will act as a diuretic and help to check the inflammatory process; acetate of morphia to relieve the pain and the dyspnoea and to diminish the expectoration; and some convenient vehicle, for instance, peppermint water. How many doses will you order? As the stage of congestion lasts only from one to three days, you need not prescribe a very large quantity. Suppose that you order sixteen doses, each dose to measure one drachm (teaspoonful), the medicine to be given every two hours. You will then have a two-ounce mixture which will last about two days and will therefore prove amply sufficient, since by that time the disease will probably have advanced to the second stage. The dose of the tincture of veratrum viride will be about two minims; of the compound tincture of cinchona, half a drachm; of the acetate of potassium, ten grains; and of the acetate of morphia, one eighth of a grain. This will give you the following prescription:

℞	Tr. veratri viridis....................	♏xxxij
	Tr. cinchonae comp................	℥ j
	Potassii acetatis	℈ viij
	Morphinae acetatis	gr. ij
	Aquae Menthae Pip q. s. u. f..........	℥ ij

M. Sig. ʒ j every two hours.

This method should be adopted whether you are writing for a mixture (like the above), for powders, pills, or capsules, for thus you will avoid giving an overdose. If, however, you wish to give an unusually large dose of any drug, it is well to underscore the quantity to show to the pharmaceutist that you have ordered it intentionally. Sometimes instead of writing a prescription with the total quantity of each ingredient given, the drugs and the amount of each for but one dose in pill,capsule, powder, suppository, etc., are named and then follow instructions to make a certain number after the prescribed formula. The following prescription for the sleeplessness of neuralgic head-ache will illustrate this procedure:

℞	Ext. Cannabis Ind	gr. ¼ — gr. j
	Confect. Rosae	

Ut fiat pilula. Fiant tales pilulae no xx.

Sig. Take one at bed time.

Be very careful in the use of abbreviations. Their too free use reveals an ignorance on the part of the prescriber, of the Latin language, but of far greater importance is it to avoid the danger to the patient thus occasioned. It is true that some abbreviations are so generally employed that they have become well known and therefore allowable. But, as a rule, the lavish use of contractions confuses the pharmaceutist, increases the liability to error, and thus becomes a source of danger to the patient. The following instance will suffice to prove this:

Aconit. may mean either Aconitum or Aconitina.

Ammon. Ammonia or Ammoniacum.

Ac. Hyd. Acidum Hydrobromicum, Hydrochloricum, or Hydrocyanicum.

Aq. Font. might be mistaken for Aqua Fortis.

Chlor. Chlorum, Chloral, or Chloroformum.

Hydr. Chlor. Hydrate of Chloral, Hydrargyri Chloridi.

Sulph. Sulphur, Sulphas, Sulphidum, Sulphitum.

Zinc. Phos. Zinci Phosphas, Zinci Phosphidum.

In some instances error will be avoided by the words which accompany the abbreviation. For instance: Tr.Ferri Chlor. can mean nothing else than Tincture of the Chloride of Iron; Hydrarg. Chlor. Mit., nothing else than the Mild Chloride of Mercury. But it is always safe to follow the rule to abbreviate as little as possible.

In giving the names of the ingredients use the Genitive case. The quantity is in the Accusative case governed by the verb recipe represented by the sign ℞. There is only one exception to the rule of putting the name of the ingredient into the Genitive which in this case is the Partitive Genitive. When a definite number of a certain ingredient is wanted, put the name of the ingredient into the Accusative case with the proper numeral after it, thus, "Vitellum unum—one yolk-of-egg." Often it is difficult to determine exactly how much of the menstruum will be required. We then give it in the Genitive case followed by quantum sufficiat ad ℥ iv. (as much as may be necessary up to), or quantum sufficiat ut fiant (as much as may be necessary in order to make). The latter (ut ft.) is preferable. Here quantum is governed by the verb recipe. In England, however, it is quite common to put the name of the menstruum into the Accusative case followed by ad; for instance, Aquam ad ℥ iv. i. e. (take) water up to, ℥ iv. Here aquam is governed by the recipe and the quantity (℥ iv.) is the object of the preposition ad. This method of dealing with approximations of quantities is convenient, safe, and guarantees accuracy in the doses of every ingredient of the prescription. It is therefore to be recommended.

The use of the Genitive and the Accusative case presupposes a knowledge of the Latin tongue. The text-books frequently give tables of Genitive case endings. The higher requirements for matriculation which the medical colleges are now adopting, obviates the necessity of these tables. Time will not suffice for me to go further into this branch of my subject. You should have made yourselves thoroughly familiar with the Latin declensions and conjugations before taking up the study of medicine.

Very few punctuation marks are required in prescriptions. Of course, it is superfluous to state that every abbreviation and every sentence should be followed by a period. The comma is sometimes used when the same quantity of two or more ingredients is ordered; thus:

℞ Res. Podophylli, ...
Aloin, ...
Ext. Belladonnae .. .. āā ....

This, however, is of minor importance, but it is better to use it as it indicates the omission of the Latin conjunction, et, (and).

You are, of course, familiar with the tables of weights and measures· To indicate quantity the following signs are used: gr. (grain); gtt., (gutta, drop); ♏ (minim); ℈ (scruple); ʒ (drachm, either solid or fluid); ℥ (ounce, either liquid or solid); ss, (semis, one-half); etc.

In conclusion, let me impress upon you the necessity of being governed by the principles which I have enunciated. By so doing you will avoid many serious errors and many a danger to your patients will be averted. You will also find that the reputation of writing a creditable prescription which you will gain among the profession and the druggists, will prove to your material advantage.

BALTIMORE, MD.

TREATMENT OF ABORTION.*

BY J. W. LONG, M.D.
Professor of Diseases of Women and Children, Medical College of Virginia, Richmond, Va.

A consideration of this subject involves many interesting questions. Of these, I will discuss but a few, and briefly.

1. When is abortion inevitable?

This question settled, the course to be pursued will be clear. Uterine pains and hemorrhages have been considered as sure evidences that abortion will occur. That this is not always true is easily proven. I recall one case that bled from the first till after the third month (with recurring pains), that went to term· Scanzoni reports a case in which occurred profuse hemorrhages in the third month, and in spite of ergot, the tampon, use of the uterine sound, and an intra-uterine injection of solution of perchloride of iron, the case went on to term. Noble† was called to a case that resisted the repeated applications of pure carbolic acid to the endometrium. Better indications that abortion is inevitable are, dilatation of the os, and descent of the ovum. Escape of the liquor amnii or septic infection may be considered a positive proof that the expulsion of the fetus is inevitable.

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* Read before the Richmond Academy of Medicine and Surgery, Feb 25, 1896.

2. Treatment when abortion is not inevitable.

Rest, quiet, and opium are the sovereign remedies. A friend of mine kept a patient under the influence of opium the entire last seven months of her pregnancy. Pains would begin whenever the drug was discontinued, nor did she become an opium habitué.

3. Inevitable abortion.

The plain indication here is to empty tne uterus, which, according to the classic maxim, is not complete until the fetus, placenta, membranes, and all clots are removed. Many times Nature herself is able to do this, and only when she fails, are we to interfere.

By far the best instrument for removing the products of conception is the finger, aided by the other hand depressing and steadying the fundus from above. In those cases where the cervix is not patulous, it becomes necessary to dilate the cervix with a steel dilator. Then the cavity is to be explored by the finger or curette, followed by a copious irrigation, and a pack of iodoform gauze.

Sometimes one is in doubt as to whether or not the uterus is empty. Especially is this true of abortions in the third and fourth months. The ovum passed intact, is evidence that the uterus is empty. A patulous cervix and continued bleeding indicate that something yet remains in the uterus.

4. Septic abortion.

In cases of this kind, delay is inexcusable. Many deaths may be put down to the credit of the let-alone, waiting, non-interference policy. The products of conception broken up and infected, as in criminal abortion, present the ideal condition for producing general sepsis. Not only should the products of conception be removed, but also the infected maternal membranes. The gaping lymphatics and open fallopian tubes will continue to spread the infection as long as any remains in the uterus. Therefore, the necessity for a thorough cleansing. In most instances this can be done only by the curette. In more advanced cases, the finger is a safe guide, because sentient. Thorough irrigation, and packing are also essential.

I have not stated that all operative or explorative procedures in the uterus must be done under strict antiseptic precautions, as this goes without saying, and it is hardly pertinent to the question under consideration.

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† A consideration of Certain Doubtful Points in the Management of Abortion. Dr. Chas. P. Noble.

I doubt that it is justifiable to curette more than once in these cases; indeed, I question whether or not uterine irrigations should be continued longer than one or two days, and it is quite probable that in these cases, where the local inflammation involves the peri-uterine to a marked degree, the manipulations necessary to intra-uterine irrigation do more harm than good.

5. When shall further operative procedures be instituted?

Hysterectomy for puerperal sepsis is one of the burning questions of the day. The advocates for it have not yet made out their case, but have established just claims to be heard. The most that can be said, at this writing, for the operation is that hysterectomy is indicated in those cases of sepsis where thorough irrigation and curettage have failed to modify or abate the general sepsis and *the local septic inflammation is confined to the uterus.* I emphasize the words in italic for thereupon will depend the result. Two such cases were reported by Dr. Cartledge, of Louisville, at the Washington meeting of the Southern Surgical and Gynecological Association, the uterus in each case being honeycombed with septic abcesses.

Vaginal incision and drainage is an operation of great value in just those cases where hysterectomy is contra-indicated.

I have described the indications and technique in a paper read by title before the Southern Surgical and Gynecological Association at the Washington meeting in November, 1895. By this method, the sodden, septic, pelvic, tissues are drained of the sepsis and the general system is also relieved.

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SELECTIONS.

THE ROLL OF FEVER IN THE MODIFICATION OF DISEASE.*

By H. A. HARE, M.D.,

Professor of Therapeutics in the Jefferson Medical College of Philadelphia.

When Dr. Foster asked me to be your guest this evening, I accepted the honor as one which was a pleasure in its conception, in its prospects, and, I now find, in its existence.

I shall not consume all the time of my address with a single line of thought, but consider three topics which I believe are of interest to us all. The first of these is, the role played by fever in the modification of disease, when it is due to an infection by germs or a poison; the second is, the reason why antipyretic drugs do harm; and the third, the rational explanation of the good results obtained by cold bathing.

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* Address read at the second annual meeting of the Allegheny County Medical Society, at Pittsburgh, Pa., January 30, 1896.

One of the most extraordinary facts in connection with practical medicine is the rapidity with which certain views in regard to pathology and treatment change, and perhaps no better evidence of this can be found than the subject of which I shall speak to-night. As long ago as the time of Hippocrates that individual expressed the belief that fever was a protective process, and many other more or less remote from our times have endorsed this view, so that we find the professional mind first regarding the fever as salutary, then as an annoying symptom, then as a symptom to be regretted, and very recently as a symptom to be controlled as a crying evil.

Notwithstanding the fact that the usefulness of fever has been recognized in the past, it is my intention to bring forward additional evidence in support of this view and against the view that fever is harmful; or, in other words, to show, by the introduction of the newer evidence produced in recent years by bacteriological and other research, that fever is not an unmitigated evil, and that when we reduce fever by the use of drugs we not only remove a symptom, but deprive the body of a therapeutic measure devised by nature for the protection of the individual.

It is scarcely a few months since a majority of us were endeavoring with a praiseworthy ardor to reduce all fever by the use of antipyretic drugs, and it is interesting to note how the profession gradually became more and more impressed with the importance of antipyresis until finally it was swept off its feet by the rising wave of what might be called febriphobia, and then was kept off its feet by the assistance of those persons whose pecuniary interests lay in drugs which reduced fever.

Let us first discover whether fever is a harmful process, and after that decide as to whether it is salutary. Like almost every question in medicine, this one is readily decided upon facts lying between two extremes of theory. There is an immense amount of evidence to show that fever is harmful and causes great changes in certain organs if the temperature really becomes very high, say as high as 108° to 110°; but there is almost no evidence that it is harmful below this point, it having been proved that much, if not all, the morbid changes in structure thought to be due to the fever are really produced by the germs of the diesease or their toxins, even if no rise of temperature has occurred. To assert, on the other hand, that fever is always innocuous or always useful, is distinctly wrong, from the standpoint of common sense, no less than from that of practical laboratory and clinical experience.

The experiments of Welch and Naunyn show that animals can bear temperatures, artificially induced, which far exceed the normal, if only there be no additional strain thrown upon the organism by an infectious process; and Welch points out that there is clinical evidence in support of this in several conditions, notably relapsing fever. I would also call attention to the fact that in cases of thermic fever which do not reach excessive heights, secondary changes due to the fever occur very rarely if at all.

Having found that fever in fairly moderate degree is not harmful, we can progress to the demonstration of the fact that it is useful—a step forward which brings us in antagonism with the general trend of thought among practicing physicians, but which is more favorably looked upon by laboratory pathologists, provided an infectious process be present as the cause of the pyrexia.

The belief that fever is a protective against infection seems sanctioned by the following facts: First, fever is a condition developing in all healthy animals as soon as they undertake, as do all healthy animals, to resist infection: and while it may be urged that it is a coincident symptom alone, this hardly seems probable in view of its importance—that is to say, nature would hardly devise a plan for vital resistance handicapped by such an important phenomenon if it were useless in itself. Second, animals which receive sufficiently large doses of germs or their toxins to cause death, beyond all doubt often develop very little fever or none at all, or, in other words, are so overwhelmed that resisting methods cannot be developed by the body. This is proved by clinical experience and the researches of Gamaleia* and others. Third, animals which receive smaller doses speedily develop fever and survive, but if the same dose be given and fever prevented by artificial means, they die as promptly as if large doses were used. Fourth, when an animal is immunized by repeated doses of toxic material, it has a febrile movement with each effort to develop antitoxin until it is completely immune, the fever being greatest in the most susceptible subject, decreasing with each infection as the animal's tissues find it less necessary to manufacture at short notice large amounts of antitoxin.

The first two propositions are so well founded as to need no citations to confirm them. In regard to the third, I may quote the experiments of Loewy and Richter,† who found that if fever was produced by the Sachs-Aronsohn method of puncture of the corpus striatum, infection by the Klebs-Loeffler bacillus, the pneumococcus, the coccus of erysipelas, and the micro-organism of chicken-cholera, when the temperature of the body was 106° F. or thereabout, failed to cause death as soon as usual, even though 100 times the ordinary fatal dose was injected. Again, these investigators found that when three times the fatal dose of pneumococcuc was injected, the animals with the highest temperature survived, and if swine-plague was injected, the course of the disease was slower than usual if fever was present.

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* *Annales de l'Institut Pasteur*, 1888, No. 5, p. 229.

† *Deutsche Med. Woch.*, April 11, 1895, p. 240.

Having shown, then, that fever is a protective process, we can adduce evidence that its absence prevents the system of the animal infected from resisting with success the onslaught of its enemies. In this connection much evidence might be adduced, for we know that anything which lowers temperature decreases vital activity, but I shall confine myself to the more recent experiments bearing directly upon the effects of reduced temperature upon infective processes. Thus in the studies of Wagner*, this author found that when chickens were infected by anthrax bacilli their temperature rose several degrees Fahrenheit and remained so for several days, and at the end of that time no bacilli could be found in their tissues, whereas if the chickens were kept cool by the partial immersion of their bodies in water they all promptly died and the symptoms of anthrax infection were typical. Similar results also ensued when the temperature was reduced by antipyrin, and the author goes on to state that five out of six of the infected chickens died. Ruffer has pointed out as a result of his experiments that "the struggle between micro-organisms and the animal cells is a physiological process always going on in the tonsils and Peyer's patches, the microphages and macrophages being victorious in the healthy animal. If these structures are weakened from any cause—e. g. over-fatigue, cold, nervous shock—a local disease follows the multiplication of micro-organisms in the tonsils. An increased emigration of phagocytes may limit the process to the tonsils even then, or the micro-organisms may break through the barrier of these cells, invade the animal's body, and the disease become general."

Without going fully into the experiments made by Pasteur, Nocard and Roux, Platania, Canalis and Morpurgo, Arloing, Charrin and Ruffer, Roger and Herman, it may be mentioned that Charrin and Roger have proved that white rats, which, as a rule, are immune against anthrax, take the disease readily when the animals suffer from muscular over-exertion; and Bouchard has shown that "when a healthy animal is exposed to the influence of cold for a considerable time, the micro-organisms readily pass from the alimentary canal and lungs into the blood; whilst the influence of hunger as a predisposing factor has been ably studied by Italian observers. The exhaustion produced by fever, want of food, etc., during the course of an infectious disease, must necessarily help the microbes of suppuration in their endeavors to penetrate into the internal organs." Pasteur also records the fact that chickens infected by anthrax survive, but if cooled they promptly succumb. Rorighi also found that if gunea pigs were cooled they resisted infection very badly, whereas if the fever persisted they survived longer or recovered. He reached similar results with pigeons. Walther reached similar results with the Fraenkel pneumococcus.* In other words, everything which tends to lower bodily temperature increases the susceptibility to disease of an infectious nature.

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* *Centralblatt für Bakt, und Parasit.*, 1891, p. 322.

The dominant tendency of all lethal poisons is to cause a fall of bodily temperature, and the effort of nature is to combat this by an increase in heat production. The well-known experiments of Brunton showed, for example, that the maintenance of bodily heat saved the lives of animals otherwise fatally poisoned by chloral, and we have just adduced evidence, not only that a rise of temperature saves life in an infectious poisoning, but that a loss of temperature aids in the fatal result.

In support of the fourth proposition we have the well-known studies of many experimenters as to the production of immunity by the development of antitoxin.

The studies of the Klemperers in connection with pneumonia are in this connection most interesting, for by the injection of the Micrococcus lanceolatus into animals they were able to render the animals immune to infection by the organisms themselves, although these organisms continued present in an unchanged form as numerous as ever. In other words, they caused a development of antitoxin in the tissues, which enabled the animals to resist the toxin of the germs. More important than this, however, is the fact that the immunizing power of the toxin was found to be very much increased when the latter was subjected to a temperature higher than the normal temperature of the animal, before being injected. Thus, if heated to about 106° F. for some time previous to injection, the development of immunity was much more rapidly produced than when cooler injections were made, immunity being reached in a few days in one case and not for fourteen days in the other, and then only after large amounts had been given. Further than this, if previously heated toxin is introduced into the circulation, the systemic reaction is slight, whereas if the toxin is not heated, the systemic reaction is far greater.

The Klemperers think, and it seems to me with good reason, that the object of this high fever following immunizing injections is to produce similar effects to those obtained by heating the toxin before injection —or, in other words, that fever in some way aids the body in acquiring immunity by the formation of antitoxin; and this is proved by the fact that days are required for the production of immunity by toxin injections, but instant immunity is attained if serum from an already immunized animal be injected, for in it the antitoxin is already present. The

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* For an interesting paper on this topic, see Max Müller, *Zeitschrift für Hygiene und Infectiouskrankkeiten*, bd. xx, heft ii, August, 1895, p. 245.

Klemperers assert that the development of crisis in croupous pneumonia occurs at the time when the body has produced sufficient antitoxin to antidote the toxin, and if fever has no connection with the process of immunization it is curious that the fall of temperature and completion of the immunizing process should occur simultaneously. It is also interesting to note that croupous pneumonia, while it usually has its crisis about the eighth or ninth day, may have it as early as the third or fourth. In other words, the individual attacked develops immunity by the making of antitoxin so rapidly that the poison of the disease is antidoted by the fourth day.

Neither the fever, the toxin nor the antitoxin has, however, much effect upon the infecting power of the germ of pneumonia, for that germ is found in some cases in equal numbers and as well developed after an attack of pneumonia as it was at the beginning, and remains so in the lungs for a long time, although Pipping* asserts that high fever changes the form of the micrococcus and renders its development more slow. This resistance is not true of all germs causing disease, for, as Gamaleia has pointed out, in anthrax-infection destruction of the bacilli can be found going on in the subcutaneous tissues at the point of infection, in the lymphatic glands, bone-marrow, and spleen, during the febrile period. This destruction is not due to leucocytosis.

As a result of this summary of the subject, I think we can affirm that fever does aid in the production of immunity, and that this is probably due to the increased rapidity of the vital processes produced by the rise of bodily temperature. In other words, the functional activity of all the organs and tissues being increased, the various methods adopted by nature for the protection of the body against infection are stimulated to the utmost. These functions exist in several parts, and it is generally recognized to-day that in the presence of infection one or all of these several protective processes are carried out in the body. In the first place, the emunctories relieve the patient's system by eliminating toxic materials; second, the glandular system protects the body from these poisons by oxidation and by the development of leucocytes whereby in turn phagocytosis is developed and antitoxin formed, and, finally, fever is produced, which there is every reason to believe is either distinctly detrimental to the germs or their toxin or so stimulant to the tissues or glands that antitoxin is more freely manufactured.

It is not necessary to dilate upon the importance of the emunctories such as the skin, kidneys, and bowels, in excreting effete materials from the body. Every one of us knows that if we can keep these parts active during an infectious disease, as, for example, scarlet fever, we will have recovery as the probable result, and we also know that just as soon as they become inactive grave symptoms arise.

**Fortschritte der Medicin*, 1886, No. 14, p. 449.

The well-known experiments of Schiff and Lautenbach have shown that the ability of the glandular apparatus, particularly the liver, to destroy poisons, is extraordinary: and this ability depends upon the blood-supply and vascularity of the gland, for it was also found by them that the mere passage of the poison through a large capillary network greatly reduced its toxic power by oxidation. Thus the liver when unimpaired in function, destroys large amounts of poison which, but for this gland, would speedily cause death. Even in so low an animal as the frog these experimenters found that doses of nicotine which were without great effect in the intact animal caused death at once if the circulation of the liver were tied off or this gland removed; and we all know clinically that just as soon as the function of this gland is impaired by congestion, inflammation, or other disease (like cirrhosis), there develops a train of symptoms commonly called biliousness, or in its severe forms something worse, which is typically a condition of toxemia even to disturbances of vision, dilated pupils, fever, and collapse. Increased glandular activity all over the body means, therefore, two important changes—first, an increased blood-supply to the gland, that is, an increased capillary circulation with consequent increase in the oxidizing power of the part: and second, an increase in bodily heat due to the glandular activity, for we know that increased oxidation means increased heat, and that the bodily heat is largely maintained by this means. It seems hard to imagine that nature would develop so good a method for destroying poisons, only to develop simultaneously an evil in the shape of fever: and the fever, as we have pointed out, is not a mere symptom or by-product of the process, but a distinct aid to the organism,—not simply a result of vital activity, but the most powerful stimulant to every part of the body, and most notably to the heart, which in turn beats more rapidly and forcibly and so increases the blood-supply to the tissues which are needing an increased amount of oxygen and nourishment in performing their increased duties.

The glands of the body not only act in the way just described, but in addition they develop leucocytes, which possess the power in many cases of destroying the germs of disease by phagocytosis, or by aiding in some as yet unknown way in the formation of antitoxin. The theory of phagocytosis is one of the most attractive of all those advanced by bacteriologists, notably by Metschnikoff. It will be remembered that the growth of infecting micro-organisms is at once arrested by their ingestion and digestion, so to speak, by the leucocytes which surround them, just as an amœba surrounds a diatom. The number of leucocytes as compared to the number of infecting germs is as important as the number of soldiers in an army, and the part which can bring a great array of leucocytes against the invaders is with difficulty infected, unless there be injected simultaneously with the germs some irritant or poison which destroys the leucocytes and gives the germs time to become too invincible by multiplication and the development of their own poison which protects them from the leucocytes. Thus it has been found, by Metschnikoff, Ruffer, and others, that if infected germs be placed under the skin of a rabbit, no infection ensues if the leucocytes can attack and destroy them; but if the smallest possible infecting dose be given by inserting beneath the skin germs protected by bibulous paper from the leucocytes, the animal ultimately dies because the nutritive juices passes through to the germ and its poisons pass out readily, but the leucocytes cannot get at the germ itself.

A further discussion of the facts for and against phagocytosis is not necessary, but we cannot overlook the important fact that in nearly every infection there is an enormous development of leucocytes, and that in cases of such malignancy that death speedily occurs we find no increase in leucocytes, either because they are vanquished by the overwhelming army of invasion, or because the system has had no time to carry out leucocytosis. So true is this that in that typically infectious malady called croupous pneumonia, one of the surest signs of a malignant attack is the lack of an increase in leucocytosis. Increased leucocytosis is, therefore, a much-to-be desired result; and as fever causes as well as results from increased glandular activity, it may stimulate the development of leucocytosis and aid in destroying the infection.

That fever does aid in the production of leucocytosis per se is, however, a matter of doubt, and the experiments of Carter, of Philadelphia, and of other investigators, such as Rorighi and Ischlenoff, seem to indicate that there is no relationship between a pure rise of temperature and leucocytosis—that is to say, artificially produced fever does not increase the number of leucocytes in the blood—but if certain infections are present, their increase becomes extraordinary. From these facts the conclusion has been reached that fever and increased leucocytosis are coincident and do not bear the relation of cause and effect. On the other hand, it is equally true that in some conditions leucocytosis ceases the moment the temperature of the patient falls to the normal. Thus, in pneumonia, leucocytosis ceases with the crisis—which result may be due to other causes, of course, than the fall in temperature. Taking it all in all, therefore, we must conclude that whatever value fever may have in infectious diseases, it does not do good always by aiding leucocytosis, if these experiments can be relied upon.

Many years ago it was the effort of physicians to reduce fevers by diaphoresis and diuresis, and they often succeeded in aborting febrile movement or aiding in its arrest or fall by measures too often to-day considered homely and useless. The fact remains, however, that whether they succeed or not in relieving fever, they did no harm, and if the fever was severe enough to resist their measures, the patient remained equally able to resist the onset of the infection producing it. The trouble, if preventable, was set aside; and if not, its true course and the object of its existence were not masked by powerful drugs. Further than this, two admirable results were attained, namely, the skin and kidneys were flushed, cleansed, and made ready for the task of eliminating materials which we call to-day "toxins," and any poisonous material already formed in the tissues or bowels was gotten rid of. Unfortunately for the profession, it was discovered that digitalis sometimes reduced fever, and, as this symptom was often the most manifest and annoying, this drug began to be used for the reduction of temperature, and with it quinine began to take a valued place on account of its antipyretic and specific effect in malarial fevers. It was the fact that quinine was futile during the early stages of all fever not malarial that aroused the desire for something more active, and the nearness of the period of ridiculous fear of exposure to cold in fevers excluded cold applications from the therapy of sucn cases. As a result salicylic acid was employed, and from this it was but a step to the common antipyretics of to-day.

There is, however, abundant evidence to show that the older methods of reducing fever in mild infectious cases by the production of sweating and increased glandular secretion all over the body had a far more rational basis than has the employment of antipyretic drugs, and that fevers which they failed to abort ran their course in many cases to the distinct benefit of the patient; further, that antipyretic drugs in reducing fever decrease the vital resistance of the patient, and that the use of the cold bath or cold sponging as employed to-day does not do good by the reduction of temperature so much as by increasing glandular and other vital activities.

Bearing in mind the four methods of nature just named, for the protection of the body—namely, elimination of poison by the emunctories, the development of antitoxin by the glands and other tissues, the production of fever to stimulate and support the system and as a result the increased functional activity, and the development of leucocytosis—we can now go still further and show that the use of antipyretic measures is only to be resorted to in cases where the fever is excessive, and that, if employed, only those are to be used which reduce the fever moderately and either increase the ability of the system to antagonize the infection or, at least, do not hinder it from doing so. For these last reasons, I believe that antipyretic drugs should very rarely be used for the purpose of reducing fever, for they not only remove fever, but at the same time depress the nervous centers governing heat-production, and increase the work of the emunctories already loaded down by the poison brought to them for elimination; and, more important than all to those who believe in phagocytosis, they arrest the development of leucocytosis and thereby remove one of the means of destroying the germs of disease (according to one theory), or of developing antitoxin (according to another). I am well aware that there is contradictory evidence in regard to the view that coal-tar products inhibit leucocytosis, but I believe that any evidence against my statement can be set aside in view of the fact that moderate variations in the number of leucocytes take place with or without the effect of drugs or infection. Further than this we have already quoted authority showing that the use of antipyretic drugs increases the fatal tendency of an infection.

The studies of Jacubowitsch, Müller and others prove very conclusively that antipyrin, at least, greatly decreases the elimination of urea by the urine, and the first-named writer vehemently condemns its use for this reason. It also decreases urinary flow, which is a distinctly harmful effect when we wish the excretion of effete materials from the body. Again, antipyrin tends to interfere with the poison-destroying function of the liver by congesting it, for, as pointed out by Baruch, the weight of the liver after death from infectious disease treated by antipyretics is found to be ten to twelve grammes heavier than in those dying of typhoid fever treated by cold baths. Porter asserts that these antipyretics in the presence of fever may cause granular and fatty degeneration in the kidney and liver.

These experimental facts seem founded upon clinical results, for under this method of treatment the mortality of infectious diseases has been high or higher than when antipyretics, as we call them, were practically unknown; the death rate from typhoid fever, for example, under antipyrin or similar treatment, being about twenty-five per cent., while in cases treated by the cold bath it is from one to five per cent. as a rule.

The natural thought is that if antipyresis is harmful when obtained by drugs, it is also harmful when obtained by cold baths. Yet clinical results prove the contrary. The fact that cold bathing does decrease the mortality of typhoid in the general run of cases is established, and it is not credible that the mere abstraction of heat can influence the progress of so grave a disease. I have long felt that the cold bath did more than abstract heat, and I venture to advance the idea that it does so by permitting the tissues to destroy the poison of the disease by oxidation or allied processes. By the use of antipyretic drugs we prevent fever by decreasing the production of heat, and thereby inhibit oxidation processes in those tissues which develop the most heat and destroy the greater part of the infecting poison, be it microbic or a toxin from the growth of the germs. That is, we prevent the body from performing the protective work which it would do under the sole guidance of nature. On the other hand, if the bath be employed, we actually increase the temperature of the internal organs, as shown by Liebermeister,* who found that the internal temperature of the body was raised by the use of cold externally, and the more the cold the greater the rise. Foster also points out that when the naked body is exposed to cold for a short time the internal temperature rises. The reason of this seems to be that the blood seeks the centers, and the central organs immediately produce more heat to make up for the loss at the periphery. Therefore, the cold bath really increases the destruction of toxin, if I am right in believing that heat does aid in combating infection. The cold bath abstracts heat only, and if used in moderation, as it is when properly employed, in all fevers actually increases bodily metabolism or tissue-interchange, and consequently acts in much the same manner that an increased draught increases and makes more perfect the combustion of coal in a stove.

Liebermeister, Röhrig, and Zuntz have also shown that the use of cold applied externally increases oxidation in the body so that a larger amount of oxygen is taken up and more CO_2 eliminated; and the experiments of Thermes show that cold bathing increases the number of the blood-corpuscles and the amount of their hemoglobin. Winternitz has confirmed this observation.

The difference in the effect of the antipyretic drug and the bath are notable. Thus, if we consider the body as a stove, and the tissues producing heat as the coal, and the coal to be mixed with impurities which can only be destroyed by oxidation, we can illustrate the effects of antipyretic drugs and baths very well. The object is to prevent the stove from being injured by overheating, and yet to destroy the poisons in the coal by heat. If the fire in the coal is smothered by antipyretics, so that less heat is produced, the stove (or the body) is in no danger of injury by heat, but the impurities mixed with the coal are also left intact and do injury; whereas if the coal is allowed to actively burn, and the stove kept moderately cool by the use of water or ice placed around it, the impurities are destroyed, and the usefulness of fever is attained without damage from excessive heat.

Elaborate clinical studies in hydrotherapy in fevers and other diseases not associated with fever show that the cold bath also stimulates glandular activity and leucocytosis, improves the tone of the circulation and nervous system, and increases vital activity everywhere, and that it also increases the urinary flow and the quantity of solids in the urine. Thus, Winternitz has shown in one of his recent papers that all applications of cold to the entire surface greatly increase the number of leucocytes and the percentage of hemeglobin; and Thayer, of Baltimore, has confirmed these observations—finding in typhoid fever, for example, that the number of leucocytes was increased from two- to nearly four-fold.

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* Handbuch der Pathol, und Therapie des Fieders. p. 102.

The question which naturally arises at this point is, whether there is an actual increase in the number of leucocytes produced by the cold bath, or whether they are gathered from various areas of blood-cell production and sent out into circulation. Some unfinished studies of Thayer would seem to bear out the latter view, and this is what we certainly expect to be the case. In either event we can rest assured that the drawing of these cells into active circulation does good, whether we believe in the theory of leucocytosis as a protective process or not, for inactive non-circulating leucocytes are of little more value than none at all.

Jaquet, of Basle, finds that the number of blood-corpuscles is often considerably diminshed in fever, but after a bath of ten minutes' duration at 27° C., in most cases, one observes an increase of blood-corpuscles to the extent of 500,000 per cubic millimeter. In health a cold bath has the same effect, but to a less extent. Antipyrin has no such action, even when given to the extent of sixty centigrammes. Jaquet produced in rabbits an artificial hyperthermia by keeping them at a uniform temperature of 37° for twenty-four to thirty-six hours, until their temperature reached 40°-42° C. Blood drawn from the ear showed a considerable diminution in its red corpuscles, while on the contrary there was a decided increase in the corpuscles of the liver. It would seem, therefore, that in fever the corpuscles accumulate in those organs where the circulation is slowest, e. g., the liver, and the cold bath acts like a tonic on the circulation and tends to get rid of this globular stasis, thus favoring the general circulation.

In my Text-book of Practical Therapeutics, the first edition of which appeared about five years ago, I said in regard to this effect of cold on the circulation: "On entering the water he (the patient) shivers, thinks it almost unbearably cold, his teeth chatter, and he gasps if the cold suddenly touches the belly-wall or any exposed surface. In a moment, however, reaction sets in, and the extremities, heretofore blue, trembling, and covered with cutis anserina, become warmer and flushed. The pulse is increased in force and frequency, and the respirations are deeper and more thoroughly performed. As a result of this, each portion of the body receives a more perfect supply of blood and feels rejuvenated. Following this stage of exhilaration a third comes on in which the blueness and depression of the first stage recur in an exaggerated degree, but this condition does not ensue unless the person remains too long in the water. If he leaves the bath while in the acme of his exhilaration, the stimulus may remain with him throughout the rest of the day."

The reason for the occurrence of this train of symptoms, is not far to seek. The chilliness of the first stage shows that the great abstraction of heat is lowering the bodily temperature, the centers of calorification in the body not manufacturing all the heat that is needed for the preservation of the normal temperature. At first the cold drives the blood hurrying into the warm recesses of the body, leaving the surface cold; but in a few moments the system is aroused to the recognition of the fact that it must increase its exertions in the propulsion of blood and the manufacture of heat, and so with an effort it puts forth all its power, picks up each corpuscle that is hiding from the cold in the internal organs, and, after imbuing it with warmth obtained by increased heat-production in the sources of heat manufacture, forces it out to the surface of the body along with its fellows, which are driven to all parts of the system. This is not a mere figurative way of putting the matter, for cold always contracts blood-vessels and reflexly stimulates the vital centers to increased activity.

The cold bath, therefore, has a physiological action far more important than the withdrawal of heat, this being a minor and side issue, and it really puts the system in the best trim to resist disease. Only when used for a protracted period of time in such a way that it abstracts more heat than the body can make, does it really reduce the temperature of the entire body.

My views in regard to these questions may therefore be summed up as follows:

First: Moderate fever has been proved to be in itself harmless. Hyperpyrexia is of itself harmless.

Second: Moderate fever has a useful function to perform in the body in the presence of an infection.

Third: Cold baths do good, not by the mere abstraction of heat, but by increasing metabolism and the rapidity of all vital processes.

Fourth: The use of antipyretic drugs is contra-indicated in all infectious diseases. Five years ago, when their use was far more popular than it is to-day, and before we knew as much of their effects and the development of immunity by antitoxin, I said in an essay on "Fever and Antiseptics" to which was awarded the Boylston Prize of Harvard University:

"While it is true that antipyrin may be employed in any disease associated with high temperature, such as typhoid fever, pneumonia, or erysipelas, it must not be forgotten that but one object is gained by its use. Antipyrin, even though its influence may be most favorable in a given case, still accomplishes nothing in the way of cure. Antipyrin only governs the heat processes, while the disease plows its way onward to recovery or death; although it may, by quieting restlessness due to the fever or to the nervous disorder produced by the disease, render the pathway to recovery more easy, but no shorter than if it were not employed.

"Many physicians have looked and still look upon antipyretic treatment as curative in its effects, but nothing can be more distant from the truth. It should be distinctly understood and taught everywhere that these drugs belong to a peculiar class; a class of drugs to which we gladly turn when told 'to treat the symptoms as they arise;' a class of drugs which are to be used solely for the relief of the symptoms, and not for the cure of the disease."

These views I still hold, and I think that those best qualified to judge will give them their endorsement.—The Therapeutic Gazette.

LABORATORY EXPERIENCE IN THE BACTERIOLOGY OF DIPHTHERIA.[1]

By WILLIAM G. BISSELL, M.D.
Bacteriologist, Department of Health, Buffalo, N. Y.

A considerable amount of bacteriological work relating to cultural examinations for the diagnosis of diphtheria was carried on in the laboratory of the Department of Health in this city prior to January, 1895, but it was not until about that time that such work was begun in a regular and systematic manner.

The importance of such examinations has been thoroughly demonstrated by the uniform result of experiments carried on throughout the United States, England, Germany, and France, and the time has arrived when the exact value of such examinations can be clearly and definitely stated.

The scope of the work carried on in the Bacteriological Bureau of the Department of Health in this city is familiar to most of the members of this section of the academy, and I will not impose upon your time by going into detail as to the system used, but will confine myself particularly to the points pertaining to the bacteriology of diphtheria, as experienced in making over 1,500 cultural examinations.

The object sought in routine municipal bacteriological examination for the diagnosis of diphtheria, is to promote general sanitation and thereby lessen the death rate. The individual points tending toward this ultimate result are as follows:

1. The confirming of clinical diagnoses and the determining of doubtful cases.

2 The differentiating between the cases of true diphtheria and those caused by cocci, so that persons affected by the latter complaints may not be unnecessarily exposed to diphtheria, as in the case of being sent

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[1] Read before the Pathological Section of the Buffalo Academy of Medicine, December 17, 1895; appending circular recently published by the Health Department.

to a hospital ward, or undergo the inconvenience of being isolated and their dwellings placarded, in case of their remaining at home.

3. To determine the presence or the absence of the specific bacillus in the secretion from the parts previously affected in convalescent cases, the object being to lessen the spread of the disease by not letting such persons at large until the infectious element has disappeared.

My paper this evening will present briefly an account of the work performed in this city by the Department of Health by summarising such facts as would seem likely to be of interest and of value pertaining to the bacteriology of diphtheria.

It might be well to first explain in a general way the various methods by which routine bacteriological examination is carried on.

There are principally three:

1. By using a culture set, composed of a sterilised swab and the Loeffler blood serum media, the culture being made at the bedside of the patient by the attending physician or those in charge.

2. By supplying the practitioner with a sterilised swab made of lamb's wool. The exudate being collected on the swab and such swab, encased in a sterilised glass tube, sent directly to the laboratory. The bacteriologist makes an examination of the exudate direct before making a cultural inoculation and subsequently examining the cultural growth.

3. By using a platinum wire attached to a glass rod, commonly called oese, the physician or attendant obtaining the infected material from the throat by the use of the oese instead of the swab, the inoculation being made at the bedside of the patient as in the first-named method.

The objections to the method of using the oese and the one of sending the exudate on the swab directly to the laboratory are apparent.

By an inexperienced person the use of the oese is a difficult and painstaking procedure, and cultural inoculations made in this manner by the ordinary practitioner are very apt to be inferior and more uncertain as to obtaining a good inoculation than those made by the use of the swab.

As to the method of sending the swab containing the exudate direct to the laboratory, it would be impossible in this way to carry on routine municipal examinations as it is conducted in the city of Buffalo. The swab must be delivered direct to the laboratory in order that it may not become dried, and this is ofttimes inconvenient or impossible for physicians to do.

The point has been raised as to whether it is possible by microscopical examination of a smear of the exudate to make a reliable and positive diagnosis as to the existence of diphtheritic infection. Such examination would oftentimes be of the greatest value to the physician by the immediate determination of a suspicious case, but the procedure is so uncertain as to reliable results that I do not favor this method for routine work.

Oftentimes only a few organisms are present in the exudate at the time of its collection and it is an easy matter for an experienced observer not to detect their presence· So, considering the inconvenience of being obliged to send the swab directly to the laboratory, and the unreliability as to the result of the examination and the universally good results obtained by the use of the swab cultural inoculation, I am led to believe that the original method, as suggested by Dr. Biggs, of New York, is the most satisfactory in that it is most convenient and much more reliable.

Experience has demonstrated in the laboratory work in this city that persons who have once had experience in making cultural inoculations, and who follow carefully the points laid down in the directions for making such inoculations, invariably get satisfactory inoculations.

Out of 1,535 cultural inoculations made by the physicians in this city since the inauguration of municipal bacteriological examination, but eighty-three were found to be imperfect, and in about one-third of this number the swab had been thrust into the media, showing that the physician had not carefully read the directions, as such portion is noticeably printed in italics.

Occasionally a culture will be so highly contaminated with various bacterial growths that it is impossible to recognize the Klebs-Loeffler bacillus, when such organism is present in small numbers.

The smallest amount of certain germicidal fluids, especially the solutions of the bichloride of mercury, in the throat of a patient at the time of the collection of the exudate will frequently prevent growth on the culture media, and it is important to bear in mind this condition when obtaining material for cultural inoculation.

As to the best media to use in routine diphtheritic examination, I think it is the universal opinion of workers in this line that the Loeffler blood-serum, prepared by the quick method, answers every purpose. Much has been said relating to the value of the bouillonised hydrocele fluid as an isolating media in such examinations. It was claimed that the Klebs-Loeffler bacillus is of more rapid growth than the commoner cocci usually found in the throat of diphtheritic patients, and that such organism, when present in but small numbers in the exudate, will predominate over the other organisms on cultural examinations. I do not think this to be a fact, for carefully conducted experiments as to the isolating power of this media in relation to the Klebs-Loeffler bacillus tend to show that the commoner cocci develop about as rapidly as does the diphtheria organism.

The Klebs-Loeffler bacillus grows rapidly on various media used in bacteriological work, glycerine agar probably being the most suitably adapted next to the blood-serum mixture.

As to the descriptive characteristics of the diphtheria bacillus, I will not report at length, but I wish to emphasise the fact of the great liability to variations in its form and size. This tendency to change is sure to puzzle the inexperienced observer, though when understood becomes in itself microscopically diagnostic. The organism as found in the exudate ofttimes presents the appearance of a diplobacillus, which stains more or less uniformly, usually showing some polar darkening. In other and much rarer cases, it resembles the organism as grown on blood-serum. The cause of this variation may possibly be found in the condition as to the reaction or composition of the mucous membrane or secretion in the throats of different patients. This idea seems very plausible, for under artificial cultivation the character of the media greatly influences the appearance of the bacillus; but the variations shown in the bacilli of cultures cannot be entirely accounted for by the character of the media, or by the temperature at which it was grown, or the staining manipulation, for the cultures of different exudates grown together under precisely similar conditions and stained in like manner often give different results. In some the bacilli may be uniform in size, shape, arrangement and staining, while others will exhibit wide differences in all these respects. The most typical form of the diphtheria bacillus is usually the one grown on blood-serum media, presenting extremely long, narrow rods with wide interruptions usually stained heavily at the ends and of irregular length.

I have noticed that in media containing much water of condensation the staining peculiarities are usually not as well marked, the most typical form of this bacillus being usually found in growths on media that is a week or so old and slightly dried. The best temperature for the rapid development of the Klebs-Loeffler bacillus seems to be that of the body or about 36½ centigrade, and it is usually necessary for cultures to remain from ten to sixteen hours at this temperature to obtain complete development.

The result obtained from the examination of 1,535 cultures shows that in Buffalo the greater majority of the cases of diphtheria yield cultures of the large size bacillus, which is usually characteristic in shape and manner of staining. It was at one time thought that the length of the organism had to do with its virulence, but experiments tend to show that this has little practical bearing. Out of the 1,535 cultures examined, 412 reveal the presence of the Klebs-Loeffler bacillus, and, as I have previously stated, 83 inoculations would not permit of examination.

Of the 1,040 cultures which did not reveal the Klebs-Loeffler bacillus, the organisms found, named in order of the frequency of their occurrence, are as follows:

No. 1.—Staphylococci, the most numerous being the aureus.

No. 2.—Cocci without any definite arrangement.

No. 3.—Streptococci.

No. 4—Bacilli other than the Klebs-Loeffler (see note No. 2), and deserving of special mention; a very large strepto-bacillus is of frequent occurrence.

No. 5.—The thrush fungus.

No. 6.—Diplococci.

The micrococci tetragenus has presented itself in several cultures, but such organism is not of frequent occurrence.

It is a noticeable fact that in several cases where the physician had noted on the report blank that a decided membrane was present in various portions of the mouth, that the auideum albicans would be present in the culture in goodly numbers.

Statistics reveal some very interesting facts concerning the influence of age on the occurrence of true diphtheria, as well as to the mortality of the disease. The ages of persons attacked between January 1, 1895, and December 1st, range between three weeks and about sixty years. The number of cases seem to increase with each twelve months of life up to the fifth year, and then gradually diminish. The mortality is highest in the first three years of life, and then steadily diminishes until adult life. There have been two deaths this year of persons between the ages of fifty and sixty years in the city of Buffalo.

The ages and mortality in 728 cases are as follows:

MONTH.	DEATHS AS TO AGES.			Number of cases reported.	Number of cases discovered by bacteriological examination.
	Under 5.	5 to 10.	Over 10.		
January	23	6	3	77	27
February	8	3	4	48	15
March	14	3	—	58	10
April	7	2	1	43	17
May	3	2	1	39	21
June	6	3	1	48	29
July	11	2	—	48	30
August	12	1	2	48	33
September	15	5	—	54	30
October	23	9	1	114	58
November	28	10	1	142	59
	150	46	14	728	329

Total number of deaths—210.

In cases that have died of diphtheria, in which bacteriological examination had been made at the onset of the malady, it may be a matter of interest and value to note that cultural examinations usually did not reveal pure cultures of the Klebs-Loeffler bacillus, there being associated with that organism either staphylococci or streptococci. Another point worthy of consideration and certainly of the greatest interest, is that in the majority of instances where the attending physician would report that the case was very mild and hardly in a condition to be called ill, that both the staphylococcus and the streptococcus would be associated with the typical Klebs-Loeffler bacillus. (See note No. 1.)

The point I wish to bring up for consideration is that the greatest mortality in cases of diphtheria appears to be produced by a mixed infection: that is, the specific germ is usually associated with either the streptococcus or the staphylococcus, the former organism being of the greater frequency.

It seems also to be a fact that when both the staphylococcus and the streptococcus are associated in the same culture with the diphtheria bacillus, that the case is a mild one. From this latter point it would certainly appear as if there was a certain antagonism between the combined cocci and the diphtheria bacillus, and this latter point seems worthy of consideration and experiment.

As to the length of time the Klebs-Loeffler bacillus may remain alive in the throat of convalescent patients, experiments in the city's laboratory have demonstrated this time to be from about six days to thirty-nine days in the cases examined. There is no doubt, however, that the organism can remain a much greater length of time and be capable of producing the disease, and it is of the greatest importance, from the sanitary point of view, that bacteriological examinations should be made to determine the presence or absence of the infectious element before convalescent patients are allowed to go at large.

Many experienced physicians still find difficulty in believing that cases in which the exudate or pseudo-membrane is entirely absent from the pharynx and tonsils are those of true diphtheria, and it is also difficult to impress upon parents that a case is diphtheria and capable of transmitting the infection, although the person infected is hardly in a condition to be called ill.

In conclusion, I may state that absolute reliance can be placed on bacteriological examination, by a competent bacteriologist, of the bacterial growth on the blood-serum media, which has been properly inoculated and kept for about fourteen hours at the body temperature, in cases where there is a visible membrane in the throat, if the culture is made during the period in which this membrane is forming and no antiseptic, especially mercurial solutions, has been recently applied.

In cases where the membrane is confined to the larynx or bronchi, and where, therefore, there is no visible exudate against which the swab can be rubbed, surprisingly accurate results can be obtained from cultural examinations, but in a small proportion of such examinations the diphtheria bacillus may not be found in the first culture, whereas subsequent culture will reveal them in goodly numbers. It is a fact, therefore, that negative results in laryngeal cases are not absolutely reliable. In nasal diphtheria, cultures made from the throat will frequently not show the bacillus, whereas those made from the exudate obtained from the nose will reveal them in large numbers. In making a diagnosis for diphtheria it is important to know the duration of the disease, because, although the bacillus may not be present in the culture examined, it may have been present in the throat at some former time in the course of the disease.

It is a rule, however, that the diphtheria bacillus will remain for some time in the throats of patients after the disappearance of all membrane and constitutional symptoms.

From the points previously stated it is necessary to know the location of the membrane, for negative results in laryngeal cases are not absolutely reliable.

There is yet to be a case examined in the Department of Health that has been reported as false diphtheria, which has died of the disease.

[Note No. 1.—On looking through literature pertaining to the bacteriology of diphtheria, I notice that other observers have noticed this same condition, such observers being both in this country and in Europe. —W. G. B.]

[Note No. 2.—During the discussion of this paper one member of the Academy expressed regret at the author not having referred to the "other organism which closely resembles the diphtheria bacillus—namely, the pseudo diphtheria bacillus." The failure to refer to this so-called "pseudo diphtheria bacillus" was intentional, for in the author's judgment positive proof as to the existence of this bacillus is still wanting. It seems most possible and probable that the referred-to organism is none other than the Klebs-Loeffler germ, altered in virulence and in certain other slight characteristics.—W. G. B.]

Department of Health, Buffalo, N. Y.

GENERAL RULES FOR THE PREVENTION AND RESTRICTION OF DIPHTHERIA.

Diphtheria, sometimes known as diphtheritic croup; membraneous croup; diphtheritic sore throat and croup, is one of the most dangerous and fatal diseases known to mankind.

It is very contagious, such contagion being transmitted principally in three ways, viz.:

(1). By personal contact with persons, and the attendants of patients, having the disease.

(2). By contact with the discharges (secretion and excretion) from the affected parts of persons having diphtheria.

(3). By articles of clothing, bedding, carpets, dishes, books, etc., which have been in the sick room and liable to be infected.

The disease can be transmitted by articles of food, such as milk, bread, etc., and persons having diphtneria, or in attendance on such patients, should not be allowed to peddle or distribute such food, as it is a means of spreading the contagion.

The Cause.—The active agent in the production of the disease, is a germ or microbe, called the bacillus of diphtheria, and it is the germ alone that can cause true diphtheria.

The germ first fastens itself in the throat, nose or some other mucous membrane of the body, and as it grows produces a deadly poison which is absorbed by the system.

It is usually necessary to have some lowering in the normal healthy condition of a person, or an abrasion (sore) on some of the mucous membranes, to allow of the invasion (taking) of the disease, and this partially explains the reason why frequently one person will contract the disease, whereas another person equally exposed does not.

Children under the age of fifteen years are most susceptible to diphtheria, but adults are not exempt and they frequently contract the disease with fatal results.

The Disease.—Although diphtheria is a disease which usually makes the patient very sick, yet it does not always do so, and frequently persons having the disease are up and around and hardly in a condition to be called sick. It is these very mild cases that furnish the greatest source of danger as to spreading the contagion.

Such cases are as capable of transmitting the disease to others, providing the germ be present and alive in the throat, as more severe cases and such persons should remain in the nouse and be isolated until the germ has disappeared.

During the year 1894, 733 cases of diphtheria were reported to the Department of Health, and 186 of that number proved fatal.

One can appreciate, by this number, the mortality of the disease.

How to Prevent the Disease from Spreading.—Every case of diphtheria is dangerous to life. A physician should be called early and his directions carefully followed.

In case of the poor who are unable to pay for medical services, apply immediately to the Poor Department and a City Physician will be sent to attend the person free of charge.

The sign "DIPHTHERIA" placed upon a house is intended for the protection of the public and its warning should be heeded. More than half the cases of this sickness are contracted because of some one's carelessness, and if all persons interested would heed the warnings given them, its spread might be decidedly limited, for the disease is preventable.

Never enter a house having such sign unless absolutely necessary. Avoid coming in contact with the attendants of persons having the disease.

The patient must be kept in a room alone and no one admitted to that room except those in immediate attendance on the patient. It is well to quarantine the nurse with the patient and such nurse should not mingle with other persons of the household. No person, under any circumstances, should occupy the same bed with a diphtheritic patient. Doors communicating with the sick room should be kept closed, and it is an excellent plan to hang over the door a sheet moistened with a disinfecting solution.

Sufficient ventilation can usually be obtained through an open window. The best place to isolate a diphtheritic patient is in the uppermost portion of the house. The room in which the sick person is confined should be scantily furnished, containing only such articles as are necessary for the well-being of the patient. All draperies, carpets, rugs, curtains, pictures, etc., should be removed, and the bed clothing should be of the oldest, so that after the disappearance of the infection such clothes may be destroyed by fire. All closets and bureaus should be emptied before placing the patient in the room. The soiled clothing from the sick and the attendant should not be included in the family wash, and such clothes should be placed in a germicidal solution immediately after use and before going through the laundry.

Everything that the patient touches or comes in contact with is a source of danger to outsiders, and all secretions and excretions are especially dangerous. The chamber and bed-pan should be kept half full of a germicidal fluid, and all dishes, spitting cups, medicine bottles, etc., should be thoroughly disinfected before leaving the sick room, and thoroughly washed in boiling water afterwards. Never use the same dishes on the family table that are in use in the sick room. Children who have passed safely through an attack of diphtheria should be kept out of school until bacteriological examination fails to reveal the presence of the germ in the secretions from the affected parts. Such examinations will be made free of charge by the Department of Health for the attending physician, who can obtain the material necessary for the examination at any police station. The germ of diphtheria remains in the throats of persons having had the disease for weeks, and frequently months after recovery, and such persons are the greatest source of danger of infection to others. For a similar reason, the convalescent or recently recovered child should not be allowed to mingle freely with his playmates for the same period of time after recovery. It is important that during this time attendance at school should also be forbidden to all children who have lived in the same house with the patient. The school-room must be carefully watched, lest it become a place for the transmission and spreading of infectious disease.

The interments of persons who die of diphtheria must be private, and the corpse should not be exposed to view after it has been placed in the coffin; moreover, it should be placed in the coffin and buried at the earliest possible moment. Every moment that a diphtheria corpse remains unburied is a menace to the lives and health of the survivors. The body should, immediately after death, be wrapped in a cloth saturated with a strong solution of corrosive sublimate, and must be buried within twenty-four hours.

No one should ever, under any circumstances, kiss a body dead of diphtheria; whoever does so is liable to contract the disease in a very severe form.

These precautions will do very much to prevent the spread of the disease among the survivors. It is a matter of record that carelessly conducted funerals have more than once been the starting point of a fatal epidemic of diphtheria among those who have attended such funerals.

DISINFECTION.

This means the destruction of the disease germ, and consequently preventing the spread of the disease. The best way to disinfect articles is to destroy them by fire or submit them to the action of live steam. Those which it is desired to preserve are usually rendered harmless by thoroughly soaking for an hour in either of the following solutions:

1. Corrosive sublimate, one drachm; hydrochloric acid, one ounce; water, one gallon; or,

2. Carbolic acid, six ounces; water, one gallon. Label each, "Poison."

A basin of ordinary soap and water and a basin of one of these solutions, half strength, should be constantly near for the nurse to wash her hands in. Any article infected by a patient should be placed in one of these solutions until it can be burned or thoroughly boiled in water.

In fumigating by burning sulphur, using three pounds of sulphur to a room ten feet square, and increasing the amount according to the size of the room in proportions of three pounds to each additional 1,000 cubic feet of air space), the room should be tightly closed and allowed to remain so for at least twenty-four hours. The amount of sulphur burned is of great importance.

In proceeding to fumigate, the sulphur may be placed on a bed of cold ashes contained in an iron pot or coal scuttle; this is then put in a wash tub holding an inch or two of water. The sulphur may be ignited with a shovel of glowing coals, or it may be lighted by a match after moistening its surface with alcohol. Take care not to breathe the sulphurous fumes. The sulphur acts more surely as a disinfectant on articles which are moistened with water, but it is then apt to destroy the color. Thoroughly air the room after fumigating with sulphur. The attempt to disinfect the air of a room while occupied by the sick person is absurd and useless, but the room should be kept ventilated by the entrance of air through an open window.

Physicians are required by law to immediately give notice of the first case and of every case of a "disease dangerous to the public health", to the Department of Health and the physician in charge of this disease should coöperate for its restriction.

The house should be placarded for protection of the public, and such means of isolation and disinfection as outlined above should be enforced, in order to prevent the spread of disease.

Law Pertaining to the Abatement of Contagious Diseases.—"No person suffering from any of the diseases named in Section 11, and no person in charge of such patient shall attend any public, private, or Sunday school, or any public place, or enter any public conveyance. Nor shall any such person expose himself or herself in public streets, or in any manner aid in spreading their malady.

"Nor enter any public conveyance without first notifying owner, driver or person in charge, who shall provide for its disinfection before again permitting its use; but no hack or public conveyance shall permit the entrance of any one suffering from small-pox, typhus fever or any other pestilential diseases."

Law Pertaining to the Reporting of Contagious Diseases.—"It shall be the duty of any physician immediately upon the first visit to report to the Health Department all cases of infectious or contagious diseases.

"Any person acting as nurse or midwife in charge of infectious or contagious disease, in case the services of a physician are dispensed with, shall likewise report.

"Every proprietor or person in charge of a hotel, boarding-house or lodging-house shall report immediately upon the discovery of infectious, pestilentious or contagious diseases, and any person knowing of, or having reason to believe of the existence of a case of infectious or contagious disease not reported or concealed, shall report the same to the Department.

"An officer in charge of any prison, asylum, or public institution of any kind shall report immediately any cases of infectious or contagious diseases arriving, and each additional case as discovered, and once a week a report of all cases, upon death or recovery, the date and details of the disposition of the case according to the rules of the Health Department."

Law Pertaining to Children Attending School.—"It shall be the duty of the principal to exclude from school all pupils coming from a house where a contagious disease exists, or in which a death had occurred from such cause. Said pupils shall not be readmitted until there has been a compliance with the rules of the Department of Health governing the admission of pupils to schools. When a principal has reason to suspect existence of any contagious disease in a house, he shall immediately suspend pupils living therein, until the case has been investigated and shall report the same to the Department of Health. Contagious diseases shall include diseases of the skin, eye, itch, mumps and whooping cough."

Law Pertaining to Burial of Persons Dying of Contagious Diseases.—"No undertaker shall use any vehicle other than a hearse for conveyance of the body of any person dying from any of the specified infectious or contagious diseases.

"Nor shall the body of a person dying of infectious or contagious diseases be carried into any church, hall or any public place.

"The body of no person dead from infectious or contagious diseases shall be brought into the city without special permit.

"In case of death from any pestilential disease, small-pox, scarlet fever, diptheria, yellow fever, cholera, typhus, etc., it shall be the duty of the person in charge of such deceased to cause him or her to be buried within twenty-four (24) hours, and the person in charge of the funeral of persons dying of these diseases must so conduct such funeral as to be absolutely private."

Law as to Placarding of Houses.—"It shall be the duty of the Department of Health to put up and maintain in a conspicious place in front of any building in which there shall be any person sick or infected with small-pox, varioloid, scarlet fever or diphtheria, a card or sign on which shall be written or printed, in English and German, the words designating the contagious disease with which the sick person is afflicted, and shall keep the same so posted during all the time that any person so infected shall remain in the said building.

"And no person shall remove such sign or card placed on said premises, without permission of the Health Commissioner.

"In case of removal of such sign by accident or design, it shall be the duty of the occupant of said building to immediately notify the Department of Health."

ERNEST WENDE, M. D., Health Commissioner.

—Buffalo Medical Journal.

A YEAR OF ANTITOXIN.

J. M. FRENCH, M.D., Milford, Mass.

Antitoxin was first brought to the notice of the medical profession during the last half of 1894. It is therefore possible at this time to review the experience of the first year of its use, and by a comparison of the published statistics and opinions concerning its results, to ascertain with some degree of accuracy the present status of the remedy in the minds of the medical profession at large.

As to the claims of antitoxin, no one is better qualified to speak than Behring himself, who, more than any other, is its originator. "I am now definitely of the opinion," he writes, "that under suitable treatment with my remedy the mortality from diphtheria may be reduced under five per cent., if the serum is used in good time—that is before the third day of illness. * * * The serum may be used with success after the third day; but it can not be too often repeated that this can only be the case when a multiple of the ordinary dose is given, when the danger to life is due to the diphtheric process, not to infection with other matters, and when further immediate danger from obstruction of their respiratory passages is relieved by tracheotomy or intubation."

In the light of this clear statement of the claims of the method by its author, let us examine the statistics of its results in hospital and private practice.

In the Willard Parker Hospital, in Boston, from January 1 to May 1, 1894, there were treated 211 cases of diphtheria by the usual methods, with a mortality of 39 per cent. For the corresponding period of 1895, 255 cases were treated with antitoxin, with a mortality of 28 per cent. Of laryngeal cases requiring intubation, thirty-six cases were treated without antitoxin, with four recoveries; while fifty-three cases were treated with antitoxin, with nineteen recoveries. Of laryngeal cases not requiring intubation, there were four deaths in thirteen cases treated without, and four deaths in eighteen cases treated with antitoxin. A further analysis shows that out of fifty-nine cases not involving the larynx, in which treatment was begun within the first three days, only four died—a mortality of 6½ per cent.—while in ninety-five such cases admitted after the third day, the mortality was 22 per cent.

In the Boston City Hospital, for the first forty-five weeks of 1894, under the usual treatment the mortality from diphtheria was 42 per cent.—which was less than the average for the preceding four years, —while during the last seven weeks of the year, when all the cases which were deemed likely at the outset to be severe were treated with antitoxin, the mortality was reduced to 21 per cent., and those cases in which the serum was actually used, to 17 per cent.

Dr. William H. Welch, in a valuable paper in the Johns Hopkins Hospital Bulletin, gives a summary of 7,166 cases treated with antitoxin, with a mortality of 17.3 per cent. At least five-sixths of these were in hospital practice, where the ordinary rate of mortality is in the vicinity of 50 per cent. He also shows that in 814 cases, in which treatment was begun before the third day, the percentage of deaths were only 5.5 per cent.

Prof. Van Ranke, of the University of Munich, states that in his clinic the mortality from diphtheria for eight years prior to September 24, 1894, the date of the introduction of the serum treatment, ranged from 46 per cent. in 1893, to 57 per cent. in 1894; while from September 24, 1894, to July 1, 1895, under the new treatment the mortality was 17.7 per cent.

Reports from Germany of 10,312 cases of the disease, show 5,833 cases treated with the antitoxic serum, with a mortality of 9.6 per cent., and 4,479 cases treated without the serum, the mortality being 14.7 per cent.

In the various children's hospitals in New York City, antitoxin has been used very successfully as a means of preventing the disease in persons who had been or were about to be exposed to its contagion. The immunity thus produced is not permanent, but lasts for a variable period, usually about thirty days. In 1,014 cases thus immunized there were only three cases of diphtheria occurring within thirty days thereafter, although the conditions were the same under which, during the ninety days preceding immunization, 225 cases of the disease had occurred. By this means it was therefore found possible to stamp out diphtheria completely in a number of great institutions in which it was prevailing in a more or less epidemic form.

The statistics of private practice are more difficult to obtain owing to the comparatively small number of cases treated by any one person, and also to the reluctance of the general practitioner to report his cases. But so far as can be gathered from the reports scattered here and there in the medical journals, the results have been even more favorable, comparatively, here than in hospital practice, while the actual percentage of deaths under either method of treatment is much less.

To clearly comprehend the theory upon which the use of antitoxin is based, let us glance for a moment at the general subject of immunity, or freedom from the liability to certain infectious diseases. A natural immunity exists in certain species of animals and in single individuals of a species, rendering them insusceptible to particular diseases. The same natural immunity is supposed to exist in some individuals of the human race, as no amount of exposure is capable of producing in them certain of these diseases; as for example, small-pox or measles. Acquired immunity is the insusceptibility to a second attack, in persons who have successfully passed through one attack of an infectious disease. It may be of a longer or shorter duration. The theory is that the tissues are exhausted of the pabulum on which that particular germ thrives. This form of immunity was formerly produced artificially in the case of small-pox, by innoculating healthy subjects with the virus of genuine small-pox, whereby a comparatively mild and less dangerous attack was induced and full immunity from future attacks secured.

But Jenner discovered that an attack of kine-pox, a different and much less serious though similar disease, was equally effective in protecting from small-pox, and substituted vaccination for innoculation—a trifling affection for one which, even in the modified form induced by innoculation, was dangerous and sometimes fatal.

The next step was taken by Pasteur, who discovered the possibility of modifying the virulence of a specific disease by a system of gradual attenuation of its virus, thereby lessening its activity without changing its nature. This he applied to the treatment of anthrax, hydrophobia, and some other diseases. His own statement of his theory is as follows: "To exhaust a soil, a parasite less vigorous and destructive than the really virulent one may suffice; and if, after having by means of a feebler organism exhausted the soil without a fatal result, the most highly virulent parasite be introduced into the system, it will prove powerless."

This system, while productive of very beneficial results, was yet attended with some degree of danger, on account of the pathological disturbances inevitably produced by the introduction of these weakened bacterial cultures into the system. The new disease thus produced, though much milder than the one which it supplanted, was yet not entirely devoid of danger.

But now a new path was blazed in the wilderness of bacteriotherapy. We owe to many observers, but notably to Raux and Behring, the discovery of the fact that there are formed in the blood of persons recovering from the specific infectious diseases, substances which antagonize the poison of the disease, and thus lead the way to recovery. Further investigation showed that if blood-serum containing these substances be injected into the blood of subjects suffering from the disease, its course is thereby arrested and a cure effected, provided the constitutional effects had not proceeded too far, and also that a similar injection in healthy subjects confers a temporary immunity from the disease. Whether this result is due to chemical or vital action is not yet definitely settled, but the weight of evidence decidedly sustains the vital theory, namely, that the antitoxin acts through the agency of the living body, and probably by rendering the cells tolerant of the poison. This system of treatment, which is known as serum-therapy, has been wrought out more fully in the case of diphtheria than of any other disease, but is already being experimented with in numerous other diseases, with every promise of brilliant results in due time.

From a review of the statistics given, and also of the published opinions of prominent investigators, the following conclusions are drawn:

1. Small doses of antitoxin will produce temporary immunity, lasting about four weeks; and for this purpose it should always be used in cases of an outbreak of the disease in public institutions, or in families where one member is attacked and absolute isolation is impracticable. This seems likely to prove one of the most important uses of the remedy.

2. Used in larger doses, and duly repeated according to necessity, it will arrest the progress of the disease, clear the throat of membrane, and unless serious constitutional effects have already resulted, will produce a speedy cure. But it will not antagonize septic poisoning, nor restore degenerative changes resulting therefrom. Therefore in order that it may be relied upon to produce recovery, it must be used early in the course of the disease, the earlier the better; while if deferred until late in the progress of the case, it may prove without avail. Whether it lessens the frequency of heart, nerve, and kidney complications, seems to depend entirely upon the period when it is used. The time of its greatest usefulness is generally placed at the first two or three days, but in reality is measured, not so much by the day of the disease as by the extent of the septic poisoning and resulting degenerative changes.

3. It cannot be too often repeated that antitoxin is in no sense a germicide, and it produces no effect upon the bacillus of diphtheria, which may persist in the throat for days and even weeks after recovery has taken place following the injection of the serum. For this reason it does not supersede the older measures of antisepsis and isolation in the treatment of the disease.

4. There are no toxic properties in antitoxin as such. But considered as a foreign substance, the blood-serum of the horse, when introduced directly into the blood and tissues of the human system may, and often does, produce disagreeable and unpleasant symptoms in the shape of urticaria and other exanthems, and occasionally elevation of temperature, swelling of the joints, and cutaneous hyperæsthesia. Mr. Lennox Browne, one of the ablest larnygologists of Great Britain, considers that it creates "an increased liability to the most grave complications of diphtheria, viz., anuria, nephritis and cardiac failure," and on this and other grounds, he does not feel justified in recommending the

use of antitoxin. His experience is at variance with that of the large majority of observers, however, most of whom agree that the essential harmlessness of the serum has been demonstrated by more than one hundred thousand injections.

5. Taking all cases reported together, the practical result of the first year's use of antitoxin, so far as can be judged at the present time, has been to lessen the death rate from diphtheria in cases where it has been used, nearly or quite one-half, thus proving itself beyond all doubt to be the most successful of any known treatment for this dread disease. It is confidently predicted that the results will be even more favorable the second year owing to improvements in the methods of preparing, preserving, and administering the serum. There is also every reason to anticipate that the same success which now attends the treatment of diphtheria by the serum method, will soon be attained in the cases of a number of other specific diseases.—The Medical and Surgical Reporter.

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ABSTRACTS.

Albuminuria in Puerperal Women.

Paijkull (Upsala Läkareförenings Förhandlingar, Band xxx, vol. i) has made an experimental investigation of this subject. His method of investigation is as follows: The urine is drawn off immediately after delivery by the catheter (the parts round the urethral orifice having first been thoroughly cleansed), and is received in flasks kept for that purpose, and always carefully cleansed by himself. The flasks are then placed in an ice chest, whence he daily removes them. Before examination the urine is carefully filtered. He puts undiluted urine into one urine glass, and into another urine diluted with two or three volumes of distilled water, according to its concentration. He then uses Heller's test, allowing the acid to trickle down slowly through a funnel with its end drawn out. He thinks that the great confusion which has prevailed in the subject is due to the fact that most authors use nitric and acetic acids indifferently. He then proceeds to examine the urine for nucleo-albumen, according to Mörner's method. The urine is dialysed in open basis at the temperature of the room. To the urine a few drops of chloroform have previously been added as an antiseptic. The dialysis takes about twenty-four hours; after this it is filtered. The strength of acetic acid used in the first experiment was 1 per cent., but later 0.5 per cent., or even weaker acid, was used. After about twelve hours the precipitate sinks to the bottom; he then filters and neutralises with caustic soda. He uses both Heller's test and boiling with acetic acid. According to Mörner urine containing nucleo-albumen gives two albumen rings. The nucleo-albumen should be precipitated by acetic acid, and if the final testing with nitric acid gives two rings, this shows that the dialysing had not lasted long enough. The process was then repeated more energetically with another portion of urine, until at the end of Heller's test gave only one ring, or the filtrate contained no albumen at all. By this method the author examined urines of 30 cases taken at random from the public lying-in hospital, and found nucleo-albumen in all without exception, manifesting itself by the following results: (1) These urines gave two rings by Heller's test; (2) this was the best seen in diluted urine; (3) by means of acetic acid in dialysed urine he could obtain an albuminous body which coagulated on boiling, was soluble in slight excess of acetic acid, and gave in addition tests one and two; but of these 30 cases no fewer than 12 contained other kinds of albumen. As albumen was found in every case the author considers it improbable that this might be due to accident or to a status epidemicus. He is therefore inclined to believe that every woman has, immediately after delivery, albumen in the urine. He also believes that the albuminuria of parturition is not exclusively a nucleo-albuminuria, and that the latter is not associated with a genito-urinary catarrh, if occurring alone. After the use of the centrifugal machine, in one series of cases where he used 100 rotations of the wheel, he obtained casts in only 25 per cent., while in other series, in which he employed 400 rotations, he obtained them in 90 per cent. He considers that this points towards the albuminuria of parturition being due to a renal affection, and not or at least not solely, to a genito-urinary catarrh.—British Medical Journal.

The Bacteriology of Rheumatism.

Dr. Saccaze (Arch. Gen. de Med.) has recently reported six cases of rheumatism which clearly indicate a causative relation of the staphylococcus to this disease. Dr. Saccaze remarks that "it is frequently possible, in case of acute articular rheumatism, to discover in the history of the case evidence of a lesion preceding the pain, and other symptoms whereby infection with the staphylococcus might have occured." In four cases of the disease, rheumatism occurred consecutively after two attacks of sore throat in persons suffering from chronic hypertrophy of the tonsils. It is remarkable that these acute exacerbations of throat ailment are frequently observed in connection with the acute attacks of articular rheumatism. In the opinion of Dr. Saccaze the general condition of the body which gives rise to the joint affection, occurs in these cases through the tonsils, which are constantly exposed to infection by the staphylococci which appear in the mouth.—Jour. Med. Sciences.

Polydactylism Experimentally Produced.

Dr. Giard (Soc. de Biologie) has experimentally produced extra toes on a salamander by placing it in a vessel half filled with water. In its attempts to keep the head above water the toes are worn away. If aquatic plants are placed in the globe upon which the feet can rest, so that effort is no longer required and sufficient food is given, the toes regenerate with great rapidity and degree. One case is related where there were previously but four toes on the front feet, in which six developed and one of the hind toes became double.

Chicago's Great Sewage Canal grows in odiousness with the progress of the work. There is reason to fear, however, that opposition to the work was too long delayed. The bare suggestion of the project should have been met by the prompt exposure of its wickedness and danger. The people of St. Louis, indeed of the whole State, now appear to be alive to the appalling crime; but a good deal more is required than an appeal to public sentiment through the American Public Health Association or otherwise to have any influence with people capable of undertaking such an enterprise. The State Board of Health of Missouri has adopted a resolution instructing its delegates to the American Public Health Association, soon to meet at Denver, to use every means to secure the aid of the association in a movement to prevent Chicago from dumping her sewage into the Mississippi, there to become a part of the drinking water of St. Louis and other cities.—Sanitarian.

INTESTINAL OBSTRUCTION AFTER LAPAROTOMY.

Prof. Stumpf (Munich) has had occasion to observe two cases of paralytic ileus after laparotomy, and, inasmuch as this is one of the most formidable and dangerous complications which may supervene after laparotomy, he describes the treatment which he employed. It is an extremely interesting fact that, in one of the cases referred to, the symptoms of ileus made their appearance immediately after the intervention. The patient had barely been taken back to bed when feculent vomiting set in, which on the following day increased in frequency until it recurred every five or ten minutes. He vainly resorted to all the measures usually employed under such circumstances, and ultimately despairing of the case, contented himself with feeding the patient by nutrient enemata, which, curiously enough, were largely retained without great difficulty. From the sixth to the eighth day the grave symptoms gradually improved and the patient was soon out of danger. He is, therefore of the opinion that, in cases of paralytic ileus it is useless to again open the abdomen, and that copious rectal injections, nutrient enemata, and medical treatment will prove more beneficial than operation. It is absolutely certain that the employment of asepsis, especially by dry means, materially reduces the number of cases of intestinal obstruction.

Prof. Zweifel, in 850 operations, in which he had recourse exclusively to dry aseptic measures applied to the abdominal cavity, has only had one case of death from ileus. He has several times observed slight symptoms of obstruction, but the patients invariably recovered. For some time he employed liquid asepsis, though with anything but satisfactory results. He is inclined to think that the nature of the aseptic measures employed has nothing to do with post-operative obstruction, and that the true causes of this terrible complication must be looked for elsewhere.

Dr. Ziegenspeck (Munich) has also had a case of post-operative ileus, in which he reopened the abdomen, but without being able to detect the cause of the mischief. The patient died, and at the autopsy the obstruction was found to have been determined by the adhesion of a loop of the small intestine to the pedicle resulting from ablation of an ovarian tumor. He would, therefore, be inclined, if obliged to reopen the abdomen on account of ileus, to search for the obstacle, in the first place, in the true pelvis, on the assumption that it will frequently be found to be connected with the pedicle or operative wound.

Prof. Tauffer (Budapest) presented statistics of the cases of ileus which have occurred in his clinique during the antiseptic period and since has exclusively employed asepsis; during the first period, of 443 operations, 10, or 2.25 per cent., were followed by intestinal obstruction, while during the second period, in 348 operations, he has only had 2 cases, or .57 per cent., of this complication.—Med. Week.

Suppurative Joint Lesions of Scarlet Fever.

Smith and Sturge (Lancet, November 16, 1895), report nine instances in which suppuration of the joints occurred out of a series of nearly 5,000 cases of scarlet fever. The patients ranged in ages from 1¼ years to 16 years. In seven of the cases the affection was non-articular, in two polyarticular. Both of the latter and one of the former died. Seven joints were affected in the upper extremity as compared with five in the lower, the elbow being the seat of trouble in three cases, the knee and hip in two cases each and the ankle and sterno-clavicular joint one each. From personal experience they noted three types of joint condition: (1) cases where flail-joint and dislocation followed absorption of fluid effusion into the joint. (2) Cases in which there exists considerable edematous swelling around the joint and a variable amount of pain on movement. On incising the joint, thick, creamy pus escapes. The synovial membrane is thickened, showing in some cases petechiæ. The cartilages do not show to the naked eye any signs of erosion. (3) Much more virulent condition. The inflammation is peri and intra-articular.

From the interior of the joint a thin, purulent fluid is obtained, and the joint capsule softened by the inflammation, very soon after the onset permits of undue mobility. The ends of the bone are more or less extensively denuded of cartilage and rough. The onset of the suppurative joint lesions seems to be commonly about the third or fourth week of the disease, more or less coincident with the development of nephritis; both lesions are probably expressive of the same general poisoning of the septum. There existed no marked cardiac lesions. Usually disassociate cases in which the ordinary serous arthritis of scarlet fever (scarlatinal rheumatism, so-called) passes on to suppuration, from cases in which the affection of the joint is purulent from the commencement. In some cases inflammation of the pharyngeal and cervical tissues is most marked and is evidently the source of infection. There is sometimes found, in fatal cases, thrombosis of the internal jugular vein. Another method of infection is by the extension to a joint of a periarticular abscess. With regard to results, ankylosis need not result even when the inflammation is so severe as to cause relaxation of ligaments and denudation of the bone ends. In addition to early and prompt surgical treatment consisting of free incision and drainage, particular stress is laid upon the advantage to be gained by prolonged immersion of the joint in a warm boracic bath. During the intervals between the baths hot boracic fomentations are preferable to dry dressings. Nasal feeding is in some cases essential in order to combat the exhaustion of the patient, and may often be employed as an easy way of giving extra food in cases where the patient is exhausted by the efforts of taking food by the mouth.

Treatment of Eclampsia.

Report of one hundred and twenty-nine cases. (Centralblatt für Gynäkologie, 1895, Nos. 46, 47, and 48.) By Professor Zweifel, of Leipzig.

The author divides the cases into two groups—those occurring between April, 1887, and January, 1892, when the expectant treatment was in vogue, and those occurring after January, 1892, on whom the most active treatment was employed. This latter treatment, as advocated by Dührssen,[1] consists in the immediate delivery of every woman after the first convulsive attack, whether before or during labor, incising, if necessary, the cervix, and even the vaginal and retrovaginal septum, the theory being that the rapid emptying of the pregnant uterus is followed in 93.75 per cent. of cases by the sudden cessation of the paroxysms. Professor Zweifel then proceeds to verify this statement from his own experience. The mortality among primiparæ was 16.6 per cent.; that among multiparæ, 5.5 per cent.,—the difference being due to the greater length and difficulty of labor among the former. The mortality among those attacked ante partum was 17.25 per cent., intra partum 14.29 per cent., and post partum 10.5 per cent. These statistics are compiled from eighty-three cases, it being impossible to determine when first attack occurred in the other cases. Of the one hundred and twenty-nine cases, twenty, or 15.5 per cent., were attacked post partum, and of these twenty-two died, or ten per cent. The number of convulsions, the duration of each, and the rapidity with which they succeed each other, have great value as regards prognosis. Also, the condition of the urine and character of the pulse and temperature are worth notice. Every case showed albumin in the urine. If the urine was scanty, of high specific gravity, and tinged with blood, the case was hopeless. A small, rapid-running pulse is not so serious as is a high fever, the higher the fever the worse the prognosis. The cause of this fever Zweifel believes to be, in the majority of cases, a coexisting pyogenic infection, and not muscular exertion and diminished radiation of heat. Considering, now, the results of treatment, the expectant method gave a mortality of 32.6 per cent. in forty-nine cases; the active, a mortality of fifteen per cent. in eighty cases. Zweifel attribute this great difference in results more to other improvements in the treatment than to the forced delivery. The active treatment is based on the theory that the convulsions cease as soon as the uterus has been emptied of its contents in the majority of cases (89-93 per cent.); but a comparison of the cases shows that of twenty-seven cases delivered by Dührssen's method, in fourteen, or fifty-two per cent., the attacks ceased, while in thirteen, or forty-eight per cent., they continued. On the other hand, of the thirty-two cases delivered by the more conservative method, in twenty-two, or sixty-nine per cent., the attacks ceased, while in ten, or thirty-one per cent., they continued. From these figures he concludes that the more radical interference, by the irritation it produces, renders the patient more liable to a continuance of the convulsions. He concludes: "The result of the classification of my cases I condense as follows: that the complete evacuation of the uterus favors the cessation of the eclamptic attacks, and, indeed, the more so the more conservative the method of evacuation has been. On all occasions, when the question of incisions arises, the maxim should be, as large as necessary but as small as possible." The article concludes with the following rules for treatment:

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[1] Archiv für Gynäkologie, vol. xliii. p 159.

1. During labor, finish the delivery as soon as possible, under the administration of an anæsthetic if the os is not dilated; although most authorities advise an expectant plan of action, sanctioning operative interference in exceptional cases only, Professor Zweifel says, "I advise as an axiom, founded on my own experience, the operative completion of labor in every case." He recognizes two methods of procedure in such

cases, according as the obstruction is caused by the undilated os alone or by the os and the vaginal cervix also.

2. In the first case the result may be accomplished, as a rule, by the conservative and safer method of dilatation with inflatable rubber bags; in extreme cases, by small incisions that give rise to little hemorrhage.

3. In the case of an eclamptic patient, with the vaginal cervix still contracted and the external os barely admitting one finger, a beginning should be made with the bags. The incisions through the cervix here must be far greater, and one must expect considerable bleeding to follow.

The hemorrhage takes place post partum, and Zweifel employs Billroth's or similar forceps, and a tamponnade of sterilized cotton pledgets after the uterus has been wiped out with sterile gauze.

4. Since one cannot tell beforehand how much blood will be lost in such a delivery, blood letting should be postponed until the uterus has been emptied. On the other hand, venesection to the amount of five hundred grammes is of advantage if the eclamptic seizures continue, and, in general, where they are accompanied by a hard, tense pulse, even before the delivery, if the conditions correspond to 3, for many older authors have asserted that dilatation is greatly accelerated by venesection.

5. Nothing must be given to the unconscious patient to swallow, but the stomach-tube should be used exclusively, and, as a preparatory step, the stomach should be washed out whenever disturbances of the gastro-intestinal tract may be assumed. Drinks containing citric, tartaric, or acetic acid should be poured into the stomach.

6. As anæsthetics, both chloroform and ether are serviceable, but are to be used only during the operative delivery. Opium and chloral are discarded, as tending to prolong the eclampsia.

7. The most thorough asepsis is here the more desirable as infection prolongs the duration of the attacks.—International Med. Mag.

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MEDICAL NEWS AND NOTES.

THE SECOND PAN-AMERICAN MEDICAL CONGRESS.—The committee on organization of the Second Pan-American Medical Congress has elected Dr. Manuel Carmona y Valle, president; Dr. Rafael Lavista, vice president, and Dr. Eduardo Liceaga, secretary, and has announced November 16, 17, 18, and 19, 1896, as the date of the meeting to be held in the City of Mexico. The most cordial invitation is extended to the medical profession of the United States to attend and participate in the meeting. Titles of papers to be read should be sent at the earliest practicable date to Dr. Eduardo Liceage, Calle de San Andres num 4, Ciudad de Mexico, D. F. Republica Mexicana. The date selected is in the midst of the delightful midwinter season when the climate of Mexico is the most attractive to the northern visitor. The occasion should stimulate the medical profession of the United States to a most cordial reciprocation of the generous patronage accorded the Washington meeting of the Congress by our Mexican confreres. It should be remembered that the United States is the largest, and in many regards the most important of American countries, and that as a consequence more is expected of it than of any other Occidental nation. In no particular is this more true than in the maintenance of position in the realm of scientific medicine on the western hemisphere. It is, therefore, simply essential that in this Congress—the most important of all medical congresses, in its exclusive, yet broad, American significance—the best thought and the best work of the American profession shall be conspicuous in the proceedings. The zeal and enthusiasm of the Mexican profession and the active interest of the Mexican Government are co-operating to make the second Pan-American Medical Congress attractive, important, and memorable. Those who contemplate attending should send their names and addresses at as early a date as possible to Dr. Charles A. L. Reed, St. Leger Place, Cincinnati, that the committee in Mexico may be advised of the probable attendance.

William Pepper, ex-officio President,
A. M. Owen,
A. Vander Veer,
Charles A. L. Reed, ex-officio Secretary.
International Executive Committtee for the United States.

Dr. Charles A. L. Reed, of Cincinnati, has been selected by the European committee on organization of the International Periodical Congress of Gynecology and Obstetrics, as honorary president of the meeting of that body, to be held in the city of Geneva, Switzerland, the first week in September of this year.

College of Physicians of Philadelphia, n. e. corner of Thirteenth and Locust streets. The fourth triennial prize of Four Hundred Dollars, under the deed of trust of Mrs. William F. Jenks, will be awarded to the author of the best essay on "The Etiology and Pathology of Diseases of the Endometrium, including the Septic Inflammations of the Puerperium." The conditions annexed by the founder of this prize are, that the "prize or award must always be for some subject connected with obstetrics, or the disease of women, or the disease of children;" and that "the trustees, under this deed for the time being, can, in their discretion, publish the successful essay, or any paper written upon any subject for which they may offer a reward, provided the income in their hands may, in their judgment, be sufficient for that purpose, and the essay or paper be considered by them unworthy of publication. If published, the distribution of said essay shall be entirely under the control of said trustees. In case they do not publish the said essay or paper, it shall be the property of the College of Physicians of Philadelphia." The prize is open for competition to the whole world, but the essay must be the production of a single person. The essay, which must be written in the English language, or if in a foreign language, accompanied by an English translation, must be sent to the College of Physicians, of Philadelphia, Pennsylvania, U. S. A., before January 1, 1898, addressed to Barton Cooke Hirst, M. D., chairman of the William F. Jenks Prize Committee. Each essay must be typewritten, distinguished by a motto, and accompanied by a sealed envelope bearing the same motto and containing the name and address of the writer. No envelope will be opened except that which accompanies the successful essay. The committee will return the unsuccessful essays if reclaimed by their respective writers, or agents, within one year. The committee reserves the right not to make an award if no essay submitted is considered worthy of the prize.

May 1, 1896. James V. Ingham, Secretary of the Trustees.

CONCLUSIONS OF NEW ORLEANS ANTIPHTHISIN COMMISSION.—In November, 1895, the Parish Medical Society of New Orleans, La., appointed a commission for the investigation and a public test of Antiphthisin as to its value in tuberculosis, to be made in the Charity Hospital of New Orleans, the commission consisting of the following members: Dr. Edmond Souchon, President; Dr. A. J. Bloch, Secretary; Dr. J. D. Bloom, House Physician of Charity Hospital; Prof. John B. Elliott, Prof. R. Matas, Prof. F. W. Parham, Dr. F. Loeber, Dr. Chas. Chassaignac, Dr. John H. Bemis, Dr. Joseph Holt, Dr. H. L. Lewis, Dr. P. E. Archinard, Dr. O. L. Pothier, Dr. A. McShane, Dr. C. J. Landfried. The treatment of cases began November 27th, and its final report was presented to the Parish Medical Society at its regular meeting, March 28th, 1896. The report is voluminous and will be published in full. The following are the conclusions arrived at:

In surgical cases a consideration of the three improved cases would certainly lead us to believe that Antiphthisin has decided value, and we should commend its careful, tentative employment in such cases in conjunction with general measures and the usual appropriate surgical operative treatment. The glandular case we consider especially encouraging. This case would seem to have required a most serious operation for the removal of the glands, with great uncertainty of ultimate benefit. The improvement under Antiphthisin treatment would alone justify us in ascertaining that we have in this remedy a most valuable aid in the management of such cases. We beg to call attention in this connection to the case of Dr. Ambler, of Ohio, reported recently in the New York Medical Record, as confirmatory evidence of the value of Antiphthisin in glandular tuberculosis. The hypodermic employment of the remedy would seem to be especially advantageous, if administered under careful aseptic precautions.

In medical cases. 1. In nearly every case the area of lung involved decreased, if it did not clear up entirely. 2. Auscultation bore out the results of percussion, vesicular respiration replacing to a greater or less degree morbid breath-sounds. In those cases which were classed as cured, the departure from health being only such as is due to the results of every continued pneumonic process. 3. Secretion was diminished even in the cases marked only improved, and entirely absent in others. 4. Bacteriological reports in most of the cases bore out the results obtained in physical and other examinations. 5. The general condition of the patients improved in the large majority of cases, even in those whose physical examination did not show any great improvement. 6. The use of the remedy was not attended with any danger to the patient. 7. Finally, Antiphthisin does seem to have curative and not simply palliative qualities.

ON THE PREPARATION OF ANATOMICAL MATERIAL.—At the recent meeting of the Association of American Anatomists a committee composed of Drs. Mears, Bryant, and Dwight made an interesting report upon the subject of the preservation of anatomical material. The keeping of bodies by means of cold storage, a plant costing from five hundred to three thousand dollars, is believed to be the method which approaches most nearly to perfection. The bodies thus preserved should be injected before being placed in the cold storage. It is suggested that in large cities where several institutions exist one plant would suffice. Of all the anatomical laws upon the statute books of the various States, that of Pennsylvania is considered to give the most satisfactory results. One novel method of keeping the subject is as follows: inject with carbolic acid, one and one-half pints; glycerin, six pints; and alcohol, one and one-half pints. After the injection has been made the subject should be painted daily for fourteen days with one part carbolic acid to six parts of glycerin. It is then to be placed in an air-tight box over a jar of methylated spirits. By this method there is said to be an absence of odor from the body and a characteristic appearance of the tissues. Wickersheim's formula consists of three thousand parts of pure water, one hundred and nine parts of alum, twenty-five parts of chloride of sodium, twelve parts of nitrate of potassium, sixty parts of carbonate of potassium, and ten parts of arsenious acid; to ten parts of a liquid so prepared one part of methylic alcohol and four parts of glycerin are added. Formalin may be used in the proportion of from one-half to one per cent., though the odor is disagreeable and the effect upon the skin of the hand is annoying.—International Medical Annual.

Dislocation of the Penis.—Dr. L. G. Fischer, of the Indian Medical Service, reports in The Lancet of November 23, 1895, a case of dislocation of the penis in a Mohammedan child aged five years. The condition was brought about by a fall under a cart, sustained four days previously. The perineum, scrotum, and lower part of the abdomen were distended with urine, and gangrene was threatening. Cock's operation was at once performed, and the scrotum and other tissues were incised in various directions. Little notice at this time was taken of the state of the penis. Upon improvement of the case, the child was removed from the hospital, but in a few months was again brought back, and the penis was found apparently very much shriveled up, although it seemed to be normal. A catheter could be passed for a certain distance, but not into the bladder. Urine came in a full jet from the small opening above and to the left of the pubes.

Under chloroform a grooved director was introduced into the fistula, and the tissues were slit up to the extent of some two and a half inches. The glans penis then came into view at the lower end of the incision and at the base of the apparent penis, which was seen to consist of the mere outer covering of the organ. A catheter was then passed without difficulty through the glans into the bladder. The glans and corpora were dissected out from their new position, in which they had become firmly fixed, and were then drawn well forward. After the skin was slit up along the dorsum of the penis, and the end of the prepuce pared, the skin was brought together round the corpora and fixed in position with horse-hair stitches. A couple of months later the case was again seen, and it was found that healing had progressed satisfactorily and the penis was in its normal position.—Medicine.

Spontaneous Disappearance of an Inoperable Malignant Neoplasm of the Bladder.—Schuchardt (Deutsche medicinishe Wochenschrift, 1896, No. 9, p. 133) has reported the case of a man, fifty-seven years old, who for four years had suffered from difficulty in micturition, without pain. The urine, at times, appeared bloody; and for six weeks it had been turbid and stinking. There were pains in the hypogastrium; at times headache, constipation, emaciation, debility, cough, and expectoration. The appearance cachectic, but there was no fever or acceleration of pulse. The respiration was a little quickened and superficial. The pulmonary resonance was preserved and auscultation revealed bronchial rales. The expectoration was muco-purulent and copious, but contained no tubercle bacilli. Above the symphisis pubis was a prominence about as large as an ostrich egg, of firm consistence, and in close relation with the abdominal wall, particularly on the left. The overlying tissues appeared to be adherent, and only slightly movable upon the tumor beneath. Through the rectum a globular mass could be felt, almost filling the pelvis, and compressing the rectum. The prostate could be felt apart from the tumor, and behind it was a transverse fissure separating the two. Upon catheterization the lumen of the bladder was found partly contracted. The urine was almost purulent and possessed an ammoniacal odor. A diagnosis of malignant neoplasm of the bladder was made and celiotomy undertaken. The rectus muscle was found infiltrated with nodules, varying in size up to a hazelnut, upon section presenting a medulary, homogeneous grayish-white appearance. The bladder was represented by a firm, nodular tumor, as large as two fists, free posteriorly, but adherent anteriorly and laterally. Upon the left the tumor was adherent to a loop of small intestine and in the immediate neighborhood the peritoneum was infiltrated with nodules of new formation. The tissues of the pelvis were also involved, particularly on the left, where the iliac artery was surrounded by new growth. In view of all these facts, the removal of the tumor was not attempted, and the wound was closed as well as it could be, a portion, however, remaining open. The patient was collapsed for several days after the operation, and the temperature remained above the normal for three weeks. Suppuration took place in the wound and continued for some time, ceasing after the removal of some unabsorbed ligatures. Finally, however, the wound closed and the patient improved in weight, nutrition and general condition, being dismissed cured six months after the operation, and so continuing three months later, at the time of last report. It is to be regretted that an examination was not made to determine absolutely the nature of the neoplasm, and of the micro-organisms present in the pus discharged from the wound.—Medical News.

REVIEWS.

The Stomach, its Disorders and how to Cure Them. By J. H. Kellogg, M. D. Illustrated. Modern Medicine Publishing Company, Battle Creek, Mich. Chicago, New York, London. 1896.

Elementary Electro-technical Series; Electricity in Electro-therapeutics. By Edwin J. Houston, Ph. D., and A. E. Kennelly, Sc. D. New York, The W. J. Johnson Co., 253 Broadway. 1896.

This little volume is intended, not only for the medical profession, but also for the public, and gives, according to its authors, "reliable information respecting such matters in the physics of electricity applied to electro-therapeutics, as can be readily understood by those not especially trained in electro-technics." The line upon which the book is written, is to refer the phenomena of electricity and magnetism to either the electro-static, or electric, or magnetic circuit, the authors believing that in this way a clearer comprehension of complex phenomena can be attained than in any other. The illustrations are clear and abundant. The book, while elementary in other particulars, presents a number of electrical phenomena in a way that is not difficult of comprehension. It will, perhaps, give a better idea of certain technical terms and their exact limitations than some of the larger and more pretentious works by medical men who are not practical electricians.

Color-Vision and Color-Blindness. A Practical Manual for Railroad Surgeons. By J. Ellis Jennings, M. D. (Univ. Penna.), formerly Clinical Assistant Royal London Ophthalmic Hospital (Moorfields); Lecturer on Ophthalmoscopy and Chief of the Eye Clinic in the Beaumont Hospital Medical College; Ophthalmic and Aural Surgeon to the St. Louis Mullanphy and Methodist Deaconess Hospitals; Consulting Oculist to the Missouri, Kansas, and Texas Railway System; Fellow of the British Laryngological and Rhinological Association; Secretary of the St. Louis Medical Society. Illustrated with one colored full-page plate and twenty-one photo-engravings. Crown octavo, 110 pages. Cloth $1.00 net. Philadelphia, The F. A. Davis Co., Publishers, 1914 and 1916 Cherry street.

The adoption of rigid rules by some of our leading railways, in regard to the testing of the eyes of their employees, especially of those of engineers and firemen, necessitates a better knowledge of the subject than is ordinarily gained in the average text book. The present volume has been prepared especially to meet this emergency, and without any effort at originality proposes to set forth "a practical work on color blindness which shall contain all that is essential to a perfect understanding of the subject, and to refer the reader to the proper authorities for many of the facts stated." The day is probably not far distant when the ability to correctly differentiate colors will be required, not only of the steam railway engineers, but of all railway employees, as many accidents in the past have been shown to be due to this unfortunate condition in an otherwise efficient man. The present volume is attractively and sensibly gotten up, and the very reasonable price will put it within the reach of all men who are in need of special information on this subject.

"Dont's for Consumptives, or the Scientific Management of Pulmonary Tuberculosis, is the title of a book which, under the authorship of Dr. Charles Wilson Ingraham, has been issued by the Medical Reporter Publishing Company, of Rochester, N. Y.

The complete work of 35 chapters is devoted exclusively to the general management of Pulmonary Invalids, no reference whatever being made to drug treatments.

The object of the author is to supply the physician with a practical work, and at the same time, by eliminating technical terms, reduce the text within the easy comprehension of the intelligent patient. The author claims that "a good understanding of his condition is the best remedy for the consumptive." With this book in the hands of his patient the physician will be relieved of a multitude of details which attach to the successful management of such cases. Special attention has been given those chapters pertaining to the destruction of tubercular infection.

The book will be printed on 72-pound antique book paper, bound in cloth (imitation morocco), with title in gold leaf. Price, $1.75.

Charles Wood Fassett, Secretary of the American Medical Publishers' Association, has just issued a revised edition of the "Medical Journal Exchange List," containing the names and addresses of all publications in the United States and Canada, devoted to medicine, surgery, pharmacy, hygiene, microscopy, and allied sciences. This list is printed upon adhesive paper, and is used extensively by publishers in mailing their exchanges, as well as by scientific writers in sending out reprints, etc. Price, $1.25 per dozen complete sheets. (Furnished free to members of the Association.)

MISCELLANEOUS.

Cremation Statistics.

Up to September of last year, 1566 bodies were incinerated at the Fresh Pond (N. Y.) Crematory. The Urn gives an interesting summary of the nativity and sex of the cremated bodies. More than half were Germans, and males predominate greatly.

The birthplaces are as follows:

Germany	820	Holland	6
United States	518	Sweden and Norway	5
England	49	Belgium	4
Switzerland	33	India	4
Austria	31	Russia	4
France	25	Australia	2
Ireland	15	Canada	2
Hungary	13	West Indies	1
Italy	9	Asia Minor	1
Denmark	8	On Mediterranean	1
Scotland	7	South-Sea Islands	1
Cuba	6	Unknown	1

They are further classified.

Men	1012	Women	411
Boys	82	Girls	61

The Lungs of one of Koch's Earliest Tuberculin Patients.

The appearances found at the autopsy of a Finnish patient who was one of the first to undergo tuberculin treatment at the hands of Professor Koch, in Berlin, are reported by Adami, in the Montreal Medical Journal for September, 1895.

The patient was a highly intelligent man, thirty-three years old, who was treated by Professor Koch at the Victoria Hospital in Berlin for fifty-two weeks in 1890. He had been suffering from hemoptysis, night-sweats and progressive emaciation. Marked improvement took place under the treatment; he returned to Finland; and his health was apparently restored. In June, 1893, he came to Canada, where he was employed as a skilled mechanic in the engineering laboratory of McGill University, and remained apparently in perfect health until January of the present year, when his cough, night-sweats, etc., returned. He was seized with severe and recurrent hemorrhages, from the effects of which he died April 18th. At the autopsy firm adhesions were found at both apices, with extensive fibroid changes, together with well encapsulated caseous masses and small contracted cavities with dense envelopes. These changes were undoubtedly signs of the arrest of a fairly extensive tuberculous process which was coincident with the treatment by tuberculin in 1890 or 1891.

That the process had only been arrested, and not cured, was evident by the lesions, which were distributed through the remainder of the lungs, which consisted of rather large miliary tubercles, broncho-pneumonic in their distribution, together with a large cavity, in the walls of which was found the eroded artery which had been the source of the hemorrhage. The fact that the recent tubercles were most numerous in the vicinity of the old disturbance makes it almost certain that the second attack of tuberculosis was not a second fresh infection, but a lighting-up of the trouble in one of the old foci, spread by dissemination through the air passages.

The interesting point about the case is the fact that a tuberculous process as extensive as was indicated by caseation, tubercular pleurisy, and the formation of five or six cavities at the apices had been arrested for four years by a year's treatment in the Berlin Hospital.

Inoculation of Leprosy.

The following article has been translated and published in Norwegian with a note by Dr. Armauer Hansen, of Bergen, Norway:

The leprous stigmata or quality are attracted to the neighborhood of light and free air, as all vegetables are, and therefore are located in such uncovered parts as the face, the hands, the forearms, legs, and feet, where they are nearest to light and air,—that is, to oxygen. Another proof that they tend to the most oxygenated parts is that the spots and tubercles appear first in greatest quantity in the convex and more vascular parts of the organs, where oxygen is most abundant.

Professor Cope, discussing the question of consciousness in variation and evolution of organic beings, says, "The causes of the movements of organic beings are various. The best known are conscious states, as hunger, cold, heat, and various other sensations; some of them of higher mental grade, as fear, anger, etc. Movements by the lowest animals, as that drop of jelly, the amœba, appear to be the result of sensations. . . . The phenomenon of heliotropism, for instance, where these simple creatures leave the dark and crowd into light places, cannot be shown to be due to chemical or physical causes only. They seek oxygen, which is more abundant where sunlight penetrates, but they have to be aware that they need it, and must have some knowledge of the fact when they get it."

Let us see if this last theory of Cope can be applied to the leper bacillus. The tubercle bacillus which is nearest in kind to, if not identical with, the leper bacillus (perhaps a variation of the same species), when drawn into the organism by respiration, inoculates most frequently the apex of the lung, probably because the motion there is least. In that place there is much oxygen. Lupus or skin tuberculosis is most frequent where insect life is very abundant. If the transmission in the first case has taken place by inoculation, as is demonstrated, we may easily presume that the inoculation, in the second case, may be effected in the same manner, probably by the intermediary of insects. I do not think there is any choice given to the bacteria of leprosy, as to localization, just as there is none in the tubercle bacillus. They develop wherever chance has deposited them, and wherever they find favoring condition and no obstacles, for instance, the outside of forearm, where there is little muscular movement. On the exposed portions of the body, oxygen retains and feeds them. The inoculation by insects can only be successful in these places, in others, circumstances are too much against them.

An internal inoculation is also easily imaginable and even probable. Salt fish is eaten all over the world; raw fish is eaten only in some countries, like Japan. Fish, especially the carp, which is so general an element of alimentation in Japan, where it is eaten raw and even alive, feed on the larvæ of mosquitoes, and may well be suspected of communicating the spores of diseases, extracted by the insects from the exposed parts of diseased bodies. If not spores, then the toxines of the bacilli.

Considering these points, I should be disposed to conclude that external inoculation means tubercular leprosy, and internal inoculation, anæsthetic leprosy.

Note.—In lupus we have the same trophic loss of tissues as in leprosy, and the bacilli of the two diseases are not distinguishable except by this circumstance; that the leper bacillus is gregarious, while the other is more individual. The microbes presenting themselves so differently may differ in a similar way in their action; this would explain the resemblance which exists certainly between these two diseases and also the difference. I should think that leprosy and lupus are the same disease with a difference. Ashmead, "Peculiarities of Colombian Leprosy."

(Extract of a letter to Hansen.)

" . . . In this article I try to bring out the following points: Non-volition of the bacilli in their localization: light and free air places; probability of the leper bacillus and the tubercle bacillus being variations of the same species; the seeming preference of the tubercle bacillus for th apex of the lung, and of the leper bacillus for the extensor-side of members, is due, perhaps, to the lack of disturbance in those places; the spectacular difference between lupus and leprosy in Colombia, South America, may be a result of the well-known and admitted difference between the bacilli of both diseases, the tuberculous microbe being individual, while the leprous bacillus is gregarious. . . ."

(Extract of a letter from Hansen.) Bergen, November, 10, 1895.

" . . . You will have nothing to object, I hope, to my translating your little paper and publishing it in our journal. I must, however, add a little note, on my own account, as to the identification of leper and tubercle bacillus, in which I have no belief, as you will see from my book, which you, as I hope, have received now. The publishers tell me they have sent it. I am very glad to see that you have not found any precolombian leprosy; just as civilization leprosy has spread from eastern countries. Yours very truly, G. ARMAUER HANSEN."

ALBERT S. ASHMEAD, M. D. (Univ. of Pa.),
Late Foreign Medical Director, Tokio, Hospital, Japan.
Unv Med. Magazine.

The Cost of an Epidemic.

In a recent number of the British Medical Journal, Dr. Munro gives the following interesting statistics. In the course of an epidemic of enteric fever in 1893 there occurred eight hundred and fifty-nine cases, and seventy-four people lost their lives. The loss in wages was $16,455; the cost of treatment was $21,475; funeral expenses, $1,850. Adopting Farr's estimate of the average value of an individual as a wage-earner, $795, we have for the seventy-four deaths the large sum of $58,830. So that the pecuniary loss to the community, arising in connection with the epidemic, amounted to a total of $98,610. A consideration of these figures, says Dr. Munro, might well suggest the reflection whether any investment was calculated to yield a better pecuniary return than the expenditure involved in the operations of the Public Health Department, which has for its main object the prevention of epidemics.

A malpractice suit recently decided in Milwaukee, Wis., is of interest in several particulars. The trouble grew out of the accidental leaving of a rubber drainage-tube in the pleural cavity. A physician, the defendant in the case, was treating a young man, aged sixteen or seventeen years, for empyema. An operation had been performed—a resection of one rib—and drainage provided for by means of two properly placed tubes; these were secured in position by two silk stitches, each stitch passing through a tube and the skin. The wound discharged freely for several days. Upon one occasion, in dressing the wound, the doctor, having gathered up the soiled gauze and thrown it into the stove, noticed that one of the tubes was missing. The dressing had been removed in such a way as to lead him to think that the tube might possibly have been thrown into the stove along with the soiled dressings. Examination with probes and forceps failed to locate the tube in the empyemic cavity. The gauze was burning or burned, and it was difficult to decide positively where the missing tube was. Another complicating circumstance was the fact that on the day previous to this the dressing had been changed by the mother of the patient and in the absence of the doctor. Under these circumstances it was not deemed best to enlarge the wound or make other incisions to look for a tube that might have been thrown into the fire or otherwise lost outside of the boy's chest. The wound healed in about the usual time, and convalescence seemed fairly established. Some months later, however, there was a slight purulent discharge through a fistulous opening in the wound, and the boy was told that a second operation would probably be necessary.

The patient then consulted a second physician, by whom he was sent to a hospital and operated upon. Resection of three or four ribs was deemed necessary, and in the discharge thus liberated was found the missing drainage-tube. The patient recovered, and suit was then brought against the first physician for $20,000 claiming damages for long illness and permanent deformity.

The case was tried three times. In the first trial the jury did not agree; in the second the plaintiff was given a verdict for $2,000; in the third the judge threw the case out on the ground that the plaintiff had not shown in the trial that his illness and disability were due to lack of reasonable skill and care on the part of the first physician.

This final outcome of the case, although not precluding the possibility of further litigation, meets with the very general approval of the local profession.—Medical News.

A Layman on the Antitoxin Treatment of Diphtheria.

Mr. Demetrius C. Boulger is his name, and from his name we should guess that his extraction was Armenian, while from his temper we should judge that, like other Armenians, he has a keen sense for atrocities. Mr. Boulger voices his plaint in the Contemporary Review of recent date and tells a story of infinite suffering, due, as he thinks, to the present "fanatical' 'and "hysterical" craze for the use of antitoxin in diphtheria. Mr. Boulger admits that he is not a doctor, but he has been crammed for the purposes of his article by a doctor who has seen 15,000 cases of diphtheria and does not believe in antitoxin, but who has not the courage to come out and say so.

Mr. Boulger's tale is simple, and is essentially this:

He was suddenly attacked while in London with a severe form of faucial and laryngeal diphtheria. He was taken to a fever hospital, and there, without being questioned, he was injected with antitoxin of double strength. He was given also brandy, iron, and chlorine gargles. He received a second injection of the antitoxin and perhaps, a third. The course of his fever, however, was not interrupted. Nevertheless, he got well, despit the malignant character of the case—and treatment—and within a month went home against the advice of his physician. Thereupon he began to suffer from weakness in the arms, legs, and throat, which weakness, he naively adds, was turned into a paralysis by the bad treatment of his physician. In a short time he was suffering from a post-diphtheritic multiple neuritis. This disease ran its regular course, and he eventually in three or four months, became completely well. Mr. Boulger seems to think that his experience is something extraordinary and, in particular, that this paralysis is quite out of the range of the usual experience. His conclusion is, first, that the course of his disease was not modified at all by the antitoxin, and second, that the multiple neuritis which followed the fever was due to the use of the serum injections. His first conclusion may be right, but as to the last it is as ludicrous a specimen of the non sequitur as was ever put forward in the pages of a review which aims to present contemporary thought.

The clinical history of diphtheria shows that such cases of paralysis as that of Mr. Boulger are by no means infrequent, and were recorded and recognized long before the use of antitoxin was introduced. In many epidemics ten per cent. of the cases of diphtheria have been followed by paralysis; Cadet de Gassicourt observed one hundred and twenty-eight palsies in nine hundred and thirty-seven cases, and it has been estimated that, if all diphtheritic patients lived, one out of every four would have diphtheritic paralysis. On the other hand, experiments made with the antitoxin serum have failed to show that this substance leads to any form of neuritis. Mr. Boulger's post-diphtheritic line of thought is most distressing, but perhaps the subtle influence of diphtheria with antitoxin does sometimes disturb the reasoning powers of even well-trained individuals. We would not argue against Mr. Boulger on this thesis.

However, Mr. Boulger's article does not end here. He passes from his own case to those of others. He cites his hospital experience and his hospital observations, and argues about the invalidity of statistics. The point which he makes as regards the latter has been well taken several times before, but our critic gives us nothing to offset, in any wise, the steadily increasing weight of evidence from all parts of the world that the use of antitoxin has a specific effect upon diphtheria. We will admit that even now there is a possibility of there being some other interpretation put upon the facts that are accumulating, but to the unbiassed mind it seems impossible to interpret them at present in any other way than by supposing that there is an immunizing and protecting property in the Behring serum.

We have given some prominence to Mr. Boulger's article for the reason that it appeared in a conspicuous journal and is likely on that account to be received as having authority. We predict, in fact, that before long there will be an Anti-antitoxin Society in England.—Editorial N. Y. Med. Record.

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THE AMERICAN MEDICAL ASSOCIATION.

In our last issue we gave the preliminary programme of the meeting of this association which was held during the last month in Atlanta, Ga. Those who are members of the association will find the detailed report of the work done in the journal published by the association. To those who are not, the same source is still available for such information, if they wish to follow the work done. Our special privilege is to thank the President for the exceedingly interesting programme furnished, and the individual authors for the high standard which characterized the papers. The President's address concludes with calling attention to some serious defects from his standpoint in the operation of the Constitution, By-Laws, and usages of the association, and we give them in full in order that those who are specially concerned may be sure to have time to give them full consideration.

1. There is nothing like the council of the British and other medical associations, whose duty it is to be in permanent session, or, at least, to meet several times a year, to consider all public questions affecting the welfare of the profession in general and the interests of the American Medical Association in particular. At the annual session there is no time for the calm deliberation, and consequently there is

great danger of hasty and ill-advised legislation, and errors occurring at the moment require a whole year to correct.

2. It appears to me that the association as a body should not act on any resolution or amendment until it has been carefully revised and recommended by the council or the business committee. In this way we would secure better legislation and prevent the adoption of ambiguously expressed amendments and resolutions.

3. It seems to me that the permanent members of the association, the conservative element, the men who attend year after year out of love for the association and the science, and who are most interested in their welfare, should not be thrust into the background and deprived of all voice in the management as at present; it seems the height of absurdity to give the ballot to the new members, who are unfamiliar with the modes of procedure and know nothing of the policy and traditions of the organization and disfranchise the old ones. (Possibly this may be in a measure overcome by the operation of an amendment introduced at our last meeting should it be adopted.)

4. As regards the place of meeting, I think the action of the nominating committee should be final, as was contemplated in the framing of the constitution wherein a nominating committee was provided for. A part of the duty of that committee was to discuss this question and thus relieve the association itself of the waste of time and wrangling which this question invariably excites.

5. To me it seems desirable in deciding this question of place meeting that such states or other societies as extend invitations to the association to meet with them, should be enabled through their representatives to state to the nominating committee the best rates of transportation to said point obtainable, for it is manifestly probable that by making arrangements in advance and getting the roads to bid, as it were, we may secure better terms than by fixing the place first, and making terms afterward.

6. And finally, it is obviously wrong that we should on taking vote upon vital questions, have no system or method by which those entitled to the franchise shall be protected in the exercise of it, as against such as are not so entitled. I would suggest as a remedy for the increasing evil that there should be some means of segregation adopted.

The address of Dr. Senn, who was elected president for the ensuing year, on some of the limits of the art of surgery is of so great interest that we shall give it to our readers as a selection in a later issue.

Dr. Sternberg read an article full or research and information, entitled, "Scientific Researches Relating to the Specific Infectious Agent of Small-Pox and the Production of Artificial Immunity from this Disease"; and one of his conclusions is of especial interest from a practical standpoint, namely, that it is probable that the subcutaneous injection lymph preserved in glycerine would give protection without any of the septic complications so common as a result of vaccination by the usual method. Another point in regard to immunity is also of interest, namely, that vaccination in the usual way only gives immunity after the eighth day, but the transfusion of a large amount of immune blood gives immediate immunity.

The various sections were also entertained by well-written papers on interesting subjects. The meeting, as a whole, brought out some of the best work that we have seen at any recent medical gathering.

DIPHTHERIA ANTITOXINE.

We do not propose to enter into a full discussion in the editorial columns of the questions as to the use, non-use, and abuse of diphtheria antitoxine. The matter, however, is one of exceeding importance to every practitioner of medicine, and for this reason, we propose to keep our readers well informed from original sources as to the status of this question. It has been said that statistics prove everything or nothing. We are not disposed to accept either statement, but we cannot refrain from observing that the records of the last eighteen months have shown throughout the whole civilized world, such a material decrease in the percentage of deaths from diphtheria where antitoxine has been used, that the evidence of its value cannot be neglected, however much it may be questioned. Only last week one of the best known practitioners in New York city, who has given special attention to this subject, both in this country and abroad, made a most bitter attack upon antitoxine as a therapeutic agent, the same writer having taken the same stand early in the days of antitoxine therapeusis. There were several others at this meeting who gave their support to the speaker's views, and the question, therefore becomes again one for earnest consideration and discussion.

We have always believed that the large quantities of antitoxine necessary for immunization and treatment would sooner or later be materially reduced, and with this reduction would come a like reduction in the injury to the blood corpuscles. Indeed, this has already been done, for there is hardly a laboratory from which antitoxine can be procured, at which it is not obtainable in different strengths. The advisability of its use for immunity is open to more question, in our opinion, than its value in the disease. The best results have, with a fair degree of uniformity, been obtained when the serum was used early in the affection, and when there might be a question as to the diagnosis, but it must be remembered that the statistics embrace a great many hundreds of cases in which, if bacteriological examinations are to be depended upon, true diphtheria was already an assured fact. Unquestionably, the personal equation will enter largely into its use, unless the public arrive at a condition where a failure to use it will be regarded as criminal negligence. With this, as with many other new remedies, the fate of each man is often determined by the results in a single case, without reference either to the quality of the material used, or the character, stage, and condition of the case upon which it is employed. Those who have been unfortunate enough to have a paralysis, sudden death or a severe nephritis coincident with or sequent to the use of the antitoxine, will readily join in the crusade against it. Those who have seen cases in which a material and rapid improvement seemed to follow its use,—cases like those which, in their experience, have previously proved fatal with the ordinary means of treament—will doubtless be as eager to rush to its defence. The present status of the question undoubtedly justifies the early use in moderate quantities of a good preparation of antitoxine. We are not prepared to say that the failure to use it under such conditions would be as easy to explain or to justify.